SECTOR 3

COASTS OF FRANCE AND SPAIN—LA GIRONDE TO CABO PENAS

Plan.—This sector describes the W coast of France from the entrance of La Gironde to the Spanish border. It then describes the N coast of Spain as far as Cabo Penas. The port of Bordeaux and other river facilities are included.

General Remarks

3.1 See General Remarks in paragraph 1.1 for information concerning the Bay of Biscay and the W coast of France.

Winds—Weather.—On the N coast of Spain, the prevalent summer winds are onshore. In the cooler months, the onshore and offshore winds are more equally divided. Gales may blow from any direction, but in all seasons, are most likely to blow from the W. Depressions traveling SE across the Bay of Biscay towards the Mediterranean Sea can form N to NE gales. These often consist of very stormy and thick weather which raises high seas along the N coast of Spain.

In winter, gales reach their highest frequency and from November to February, the wind can be expected to reach force 8 or more 7 to 9 days per month. In summer, gale frequency decreases considerably and gales of force 8 or more are only expected 1 to 3 days per month.

A Galerna is a particularly severe NW gale which occurs along the N coast of Spain. It may be preceded by a thundery squall and is most common during the months of July, August, and September. A Galerna may occur after a day of excessive heat and is usually preceded by a S or NE wind and a slight fall of the barometer. Frequently, lightning is seen and the wind veers to the NW and forms a severe squall. The wind then blows with great force for 3 to 4 hours while much rain falls. The wind then subsides and the weather clears.

A Galerna sometimes forms with the strength of a hurricane and with no prior warning. The usual time of occurrence is soon after the greatest heat of the day, but it has also been known to occur at night and in the morning.

Recent investigations show that the Galerna is often associated with a secondary depression in the Bay of Biscay. Such a secondary depression often appears when a deep and extensive depression approaches from the Atlantic towards the N of Ireland, and causes winds to blow from a SW direction for a period of several days. This type of secondary depression is reported to form very rapidly, especially in summer.

Severe squalls may also occur E of Bilbao in the hot season after a period of NE winds. Dense cloud development is usually followed by a very strong W wind and heavy rain. Then suddenly, the wind shifts to the NW and a gale forms which persists for 2 to 3 days.

Caution.—Marine exploitation, including drilling, is being carried out offshore within the waters described in this sector.

Numerous fishing vessels may be encountered off the coasts described by this sector.

Submarines frequently exercise within the waters described in this sector.

La Gironde Estuary

3.2 The estuary of **La Gironde** (45˚35'N., 1˚10'W.) lies between Pointe de la Coubre, previously described in paragraph 2.35, and Pointe de la Negade, located 14 miles SSE. It is obstructed by extensive banks and shoals through which two passages lead to the river entrance.

Cordouan, the center of a large shoal bank known as Plateau de Cordouan, lies in the middle of the estuary, 7 miles SSE of Pointe de la Coubre. It dries up to 2.5m and is the highest part of the shoal. A main light is shown from a conspicuous tower, 68m high, standing on Cordouan.

Cordouan Light

Battures de Cordouan, with depths of 2.4 to 5m, lies on the NW edge of the shoal bank and breaks heavily in bad weather. Banc du Chevrier and Banc du Gros Terrier extend S and SE, respectively, from Cordouan.

An extensive shoal area, which includes Banc de la Mauvaise, Banc de Montrevel, Banc de la Coubre, and Banc du Matelier, lies W, SW, and S of Pointe de la Coubre and may best be seen on the chart.

Lighted Buoy BXA (45˚38'N., 1˚29'W.), equipped with a racon, is moored about 13 miles WSW of Pointe de la Coubre and marks the outer approach to the estuary.

Passe Sud, the S entrance channel, is entered 4.5 miles WNW of Pointe de la Negade. It leads NE and passes on the S

side of Plateau de Cordouan. The fairway is marked by buoys and indicated by lighted ranges which are shown on the chart. It is reported to have a least depth of 4.2m and is used mostly by yachts, fishing vessels, and small craft. Vessels navigating this channel, especially at night, are advised to have local knowledge, as the banks shift and unmarked shoals, with depths of 2 to 5m, lie close to the range.

Grande Passe de l'Ouest, the N and main entrance channel, is entered 7 miles WSW of Pointe de la Coubre and 5 miles E of Lighted Buoy BXA. It leads over the bar of Banc du Matelier and passes on the N side of Plateau de Cordouan. The fairway is marked by lighted buoys and indicated by a lighted range which is shown on the chart. In 1995, there was a least charted depth on the range line over the bar of 12.2m.

Anchorage.—Vessels waiting to enter Grande Passe de l'Ouest generally anchor, in depths of 32 to 34m, about 2 miles SE of Lighted Buoy BXA. However, during the winter months, there may be a heavy swell and this area may be untenable.

Directions.—Because of the low land and the high elevations of the navigation lights in the estuary, it is generally easier to approach La Gironde at night than in daylight. This is especially true during periods of haze or low visibility, when the landmarks are even more difficult to identify.

Vessels from the N or NW generally approach the estuary after making a landfall at Ile d'Yeu (46˚43'N., 2˚21'W.). Vessels from the WNW or W generally pass well S of the shoal area of Rochebonne (46˚10'N., 2˚27'W.), but should use caution when in the vicinity of this shoal, especially during periods of low visibility.

Caution.—The dredging of the main entrance channel over the bar frequently entails the displacement of the lighted buoys from their charted positions. The charted fairway may therefore differ from the range alignment.

Several wrecks, some dangerous, lie in the approaches to the estuary and may best be seen on the chart.

Dumping ground areas, the limits of which are shown on the chart, lie about 2 miles N and S of the entrance to the main channel.

La Gironde

3.3 La Gironde is entered between Pointe de Grave, located 7.2 miles NE of Pointe da la Negade, and Pointe de Suzac, 3 miles E. Platin de Grave, a detached shoal, lies 1 mile NNW of Pointe de Grave. It has a least depth of 4.2m and is marked by a buoy.

La Gironde is formed by the union of the rivers of La Garonne and La Dordogne at Bec d'Ambes, 38 miles above the mouth. La Garonne is navigable by ocean-vessels as far as Bordeaux, 13 miles above Bec d'Ambes and some 67 miles from the open sea. La Dordogne leads SE for 24 miles to the town of Libourne and is navigable by small craft.

Winds—Weather.—In general, weather conditions at the entrance of La Gironde are marginal about one half of the time. Although good weather may be expected on the average of 160 days per year, poor conditions in the form of fog, rain, storm, and sleet may be expected in varying forms for the rest of the time. The fog is sometimes very thick, but often the tops of the lights are visible when the land and sea are obscured. Fog in the river is generally local in character and seldom disturbs navigation. Winds from seaward may raise the height of the tides as much as 1m and advance the times of HW by up to 15 minutes. Strong E winds may also retard HW by up to 15 minutes and reduce the tide by 0.3m.

Floods in La Garonne have little effect except at Bordeaux and Le Marquis, a little above Bec d'Ambes. The time of LW is not affected at any place, but the time of HW may be advanced as much as 54 minutes at Bordeaux.

Tides—Currents.—Tides at the river entrance rise about 5.3m at springs and 4.3m at neaps.

The tidal currents at the bar are strong and have an appreciable cross-channel set. Inside the bar, the tidal currents conform mostly to the channel. The flood current at the bar begins about 5 hours before HW at Pointe de Grave, and 2 hours later attains a maximum rate of 2.5 knots. The ebb current begins 20 minutes before HW, and 3 hours and 20 minutes later attains a maximum rate of 4.5 knots.

Depths—Limitations.—Navigation on La Gironde and La Garonne depends on the state of the tide. In general, vessels can ascend the river on one tide by leaving Le Verdon as soon as there is enough water to clear the channel between Pointe de Richard and Pauillac. Vessels bound for Bordeaux at a speed of 12 knots will usually be overtaken by the tidal wave in time to clear the bar lying S of Pauillac and then dock on the last of the flood.

Vessels descending the river at HW will usually be unable to clear the bar lying S of Pointe de Richard on one tide if their draft exceeds 8.5m. Various waiting roadsteads along the river can be utilized by such vessels.

Generally, in favorable conditions, vessels with drafts up to 15m can proceed to Le Verdon while vessels with drafts up to 11m can proceed to Bordeaux (Bassens). Depths can decrease due to the addition of mud brought down by the river between each dredging operation. Therefore, vessels are advised to contact the local authorities for information concerning the latest drafts allowed in the river.

Aspect.—Pointe de Grave, the S entrance point of the river, is a low and flat point backed by high trees. A light is shown from a tower, 25m high, standing on the point. A war memorial and a prominent signal station, with a radio mast, also stand on the point. Several large prominent tanks are situated just E of the tree line, about 2 miles SW of the point.

In addition to the range lights on the S side of the estuary, three radio masts and a water tower standing in the vicinity of Soulac Sur Mer, 4.5 miles SW of Pointe de Grave, are conspicuous from seaward.

In addition to the range lights on the N side of the estuary, several water towers and a church steeple stand in the vicinity of St. Palais, 5 miles NW of Pointe de Suzac, and are prominent from seaward.

A small harbor, protected by breakwaters, fronts the resort town of Royan, 3 miles NE of Pointe de Suzac. The steeple of a church, standing in the town, is conspicuous from seaward. The harbor has depths of 1 to 2.5m and is used by small ferries, yachts, and fishing vessels.

Pilotage.—Pilotage is compulsory for vessels over 70m in length and all vessels not equipped with VHF navigating within the estuary W of Pointe de Grave.

Pilotage is compulsory for vessels over 50m in length navigating within the river E of Pointe de Grave.

Pilotage is compulsory within the estuary and the river for all vessels carrying hydrocarbons or dangerous cargo.

Vessels should send their ETA at Lighted Buoy BXA through their agent at least 12 hours in advance, 18 hours if possible, to Le Verdon-Gironde Pilotage Station. Amendments to the ETA of more than 3 hours should be reported at least 6 hours in advance. The ETA message should also include the name of the vessel, position, speed, destination, draft, request for pilot, and agreement to possible pilot transfer by helicopter.

Vessels should then contact the pilot station on VHF channel 14 or 16, 3 hours before arriving at Lighted Buoy BXA. Arrangements for embarking the pilot by helicopter will be made at this time.

Pilots board about 1 mile E of Lighted Buoy BXA, between 1 hour before and 5 hours after LW at Corduan. In bad weather, pilots may board in the channel, SSE of Pointe de la Coubre. Pilots are generally provided by helicopter and winching is the normal method of transfer; a fast launch is used when a pilot cannot be received by helicopter. River pilots generally board off Pointe de Grave.

A Vessel Traffic Service System (VTS) has been established in the estuary and river as far as Bordeaux. It is mandatory for all vessels and ensures surveillance and regulation of marine traffic within the area.

Inbound vessels should send an ETA message through their agent to the Bordeau Traffic Control Center, via Bordeau-Arcachon (FFC), 48 hours before arrival at Lighted Buoy BXA. This message should include the name of the vessel, call sign, position and time, last port of call, destination, details of cargo, and details of any damage. Vessels carrying hydrocarbons or dangerous cargo should also state any disability of propulsion, mooring, berthing, control, or radar equipment.

Confirmation messages should be sent 24 hours and 12 hours before arrival; any amendments of more than 3 hours should be reported at least 6 hours in advance.

Vessels should then report to the Radar Verdon Traffic Station on VHF channel 12, 3 hours before arrival and request permission to enter the approach channel. Vessels unable to contact Radar Verdon Traffic or Le Verdon-Gironde Pilot Stations may not enter the channel.

Radar assistance in the estuary entrance may be provided by a pilot situated at Le Verdon Radar Station (La Palmyre). Such assistance is not available to laden or non-degassed tankers which must await pilotage.

Regulations.—The approach channel from Lighted Buoy BXA through Grande Passe de l'Ouest is to be considered a Mandatory Access Channel. All vessels over 1,600 grt and carrying hydrocarbons or dangerous cargo must report their entry into this channel and maintain a listening watch on VHF channel 12.

Such vessels obliged to use this access channel should, in addition to contacting Le Verdon Traffic Station, also report by VHF to La Coubre Coastguard Station.

The lights and shape required for vessels constrained by their size or draft are to be displayed by the following:

1. Vessels of 80,000 dwt or more between Lighted Buoy BXA and Le Verdon, 3 miles SE of Pointe de Grave.
2. Vessels with a draft of 7m or more between Lighted Buoy No. 15, moored 4 miles SE Pointe de Grave, and Bordeaux.

Anchorage.—Vessels, with drafts of less than 10m, waiting for the tide generally anchor, in depths of 10 to 12m, sand and mud, off Le Verdon, SE of Pointe de Grave.

Vessels, with drafts of 10m and over or anchoring for a long period, generally anchor, in depths of 15 to 20m, on the E side of the river, ENE of Le Verdon.

Caution.—Several ferries cross the river at various points which may best be seen on the chart.

Several wrecks, some dangerous, lie in the river channels and may best be seen on the chart.

Several submarine cables and pipelines cross the river and may best be seen on the chart.

Dredging is continuously in progress between Le Verdon and Bordeaux in order to maintain the projected channel depths.

There is virtually no slack water at Bordeaux at LWS; the flood tidal current starts as soon as the ebb current has ceased to run. Due to this abrupt change, vessels in this vicinity should maintain a watch on their moorings.

Occasionally, when submarines are exercising, part of the entrance fairway may be reserved for such vessels and their escorts.

Ports on La Gironde and La Garonne

3.4 Le Verdon (45˚33'N., 1˚02'W.) (World Port Index No. 37120), a tanker and container terminal, is situated on the W side of the entrance to the river, 2 miles SSE of Pointe de Grave. Conspicuous gantry cranes stand along the container quay.

An oil terminal pier has two inner berths, with a depth of 7m alongside, for coastal tankers and one outer berth, with a depth of 17m alongside, for large tankers. Generally, tankers up to 83,000 dwt, 240m in length, and 15m draft can be accommodated under ideal weather and tidal conditions. It was reported (1990) that this oil terminal was not in commercial use.

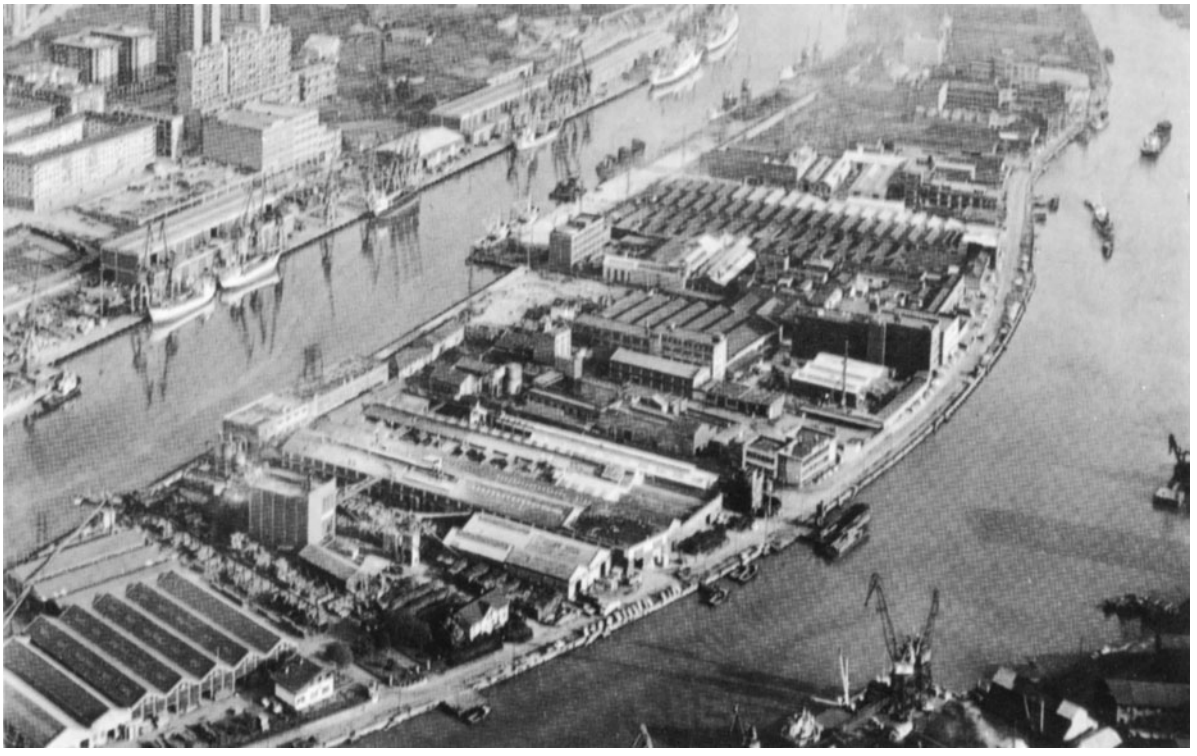
A container and ro-ro terminal quay, 600m long, is situated close S of the oil pier and has a depth of 12.5m alongside. Vessels with drafts up to 12m can be handled at any state of the tide and vessels with drafts up to 14m can be handled at HW.

Several small harbors are situated along the river between Le Verdon and Pauillac and are used by fishing craft, pleasure craft, and yachts. These include Goulee, Saint Christoly, and Saint Estephe, on the W bank, and Montagne-Sur-Gironde, Meschers-Sur-Gironde, Talmont-Sur-Gironde, Port Maubert, Vitrezay, Callonges, Portes-Neuves, and Freneau, on the E bank.

Pauillac (45˚13'N., 0˚45'W.) (World Port Index No. 37150), a small port, lies on the W side of La Gironde, 26 miles above Pointe de Grave and includes the facilities at Trompeloup, 1.5 miles N. The oil berth, with mooring dolphins, is situated at the latter directly E of the refinery, but the entire area is generally referred to as Pauillac.

Vessels approaching the port must clear the bar lying SE of Pointe de Richard, 10 miles above Pointe de Grave. It has a depth of 11.4m at HWS.

The oil berth, under ideal conditions, can handle tankers up to 245m in length, with drafts up to 10.3m at HWS and 9.8m at HWN. A riverside wharf, 290m long, is situated close S of the oil berth and can handle vessels up to 280m in length and 9.7m



Le Verdon

Pauillac

draft. It is used mainly by large vessels unable to complete their passage on one tide or by cruise liners.

A small marina, protected by breakwaters, is situated 1.2 miles S of the oil berth. It is used by yachts and pleasure craft up to 20m in length.

A conspicuous nuclear power station stands on the E bank of the river, 4 miles NE of the marina.

3.5 Blaye (45˚07'N., 0˚40'W.) (World Port Index No. 37160) is situated on the E bank of the river, 6 miles above Pauillac. The facilities include three berths which have 390m of total quayage and depths of 7.5m alongside. Grain and bulk vessels up to 200m in length and 9m draft can be handled at HW. The port monitors VHF channel 12.

Blaye is generally approached through a secondary channel, marked by buoys, which is entered from the main channel, 3 miles SSE of the berths.

Bec d'Ambes (45˚02'N., 0˚36'W.) (World Port Index No. 37171), an oil terminal administered by the port of Bordeaux, is situated at the river junction of La Garonne and La Dordogne. It is the site of two oil refineries and the main thermal power station for Bordeaux and the surrounding area.

Two oil berths are situated on the W bank of La Dordogne, close above the junction. The S berth is reported (1990) to be in poor condition and unsafe. The N berth is formed by a T-shaped pier and can handle tankers up to 215m in length and 10m draft.

An oil berth, serving the power station, is situated on the E bank of the La Garonne, 3 miles above the junction. It is formed by a T-shaped pier with dolphins and can handle tankers up to 215m in length and 10m draft.

An LPG berth, formed by a T-shaped pier, is situated 1 mile NW of the power station oil berth and can handle vessels up to 140m in length and 7.7m draft.

Several other berths are situated at the terminal and handle coastal vessels.

Izon (44˚57'N., 0˚22'W.) is situated 12 miles above Bec d'Ambes on La Dordogne. There is a private wharf which can handle vessels up to 3,000 dwt, 110m in length, and 4.5m fresh water draft. Due to bridges and cables spanning the river, vessels are also restricted to an air draft of 24m.

Libourne, a small port, is situated 23 miles above Bec d'Ambes on La Dordogne and is reported to be closed to commercial traffic.

Prominent marks along the shore include several dish antennas, 55m high, standing at Le Contau air base, 16 miles S of Pointe de la Negade; and a water tower and a large house standing in the village of Lacanau, 13 miles S of Le Contau air base.

Bec d'Ambes

Bordeaux (44˚51'N., 0˚34'W.)

World Port Index No. 37190

3.6 The port of Bordeaux, a major port, is situated along both banks of La Garonne, about 67 miles above the entrance to La Gironde. Ocean-going vessels have access up to Pont de Pierre, a stone bridge with numerous arches, which divides the harbor into two sections. A river port extends above Pont de Pierre and the main facilities for commercial vessels extend to Bassens, 4 miles below the bridge.

Tides—Currents.—Tides at Bordeaux rise about 5.3m at springs and 4.2m at neaps.

Generally, the tidal currents run in the direction of the channel and attain rates at springs up to 2.8 knots on the flood and 3.8 knots on the ebb.

Depths—Limitations.—A suspension bridge, with a vertical clearance of 51m, spans the river 2.5 miles below Pont de Pierre. A cable, with a vertical clearance of 48m, spans the river 2.3 miles below the suspension bridge.

The least depth in the approach to the port is 5.8m in La Gironde. La Garonne has general depths of 5.9 to 7m, but the tidal rise is slightly less than in La Gironde.

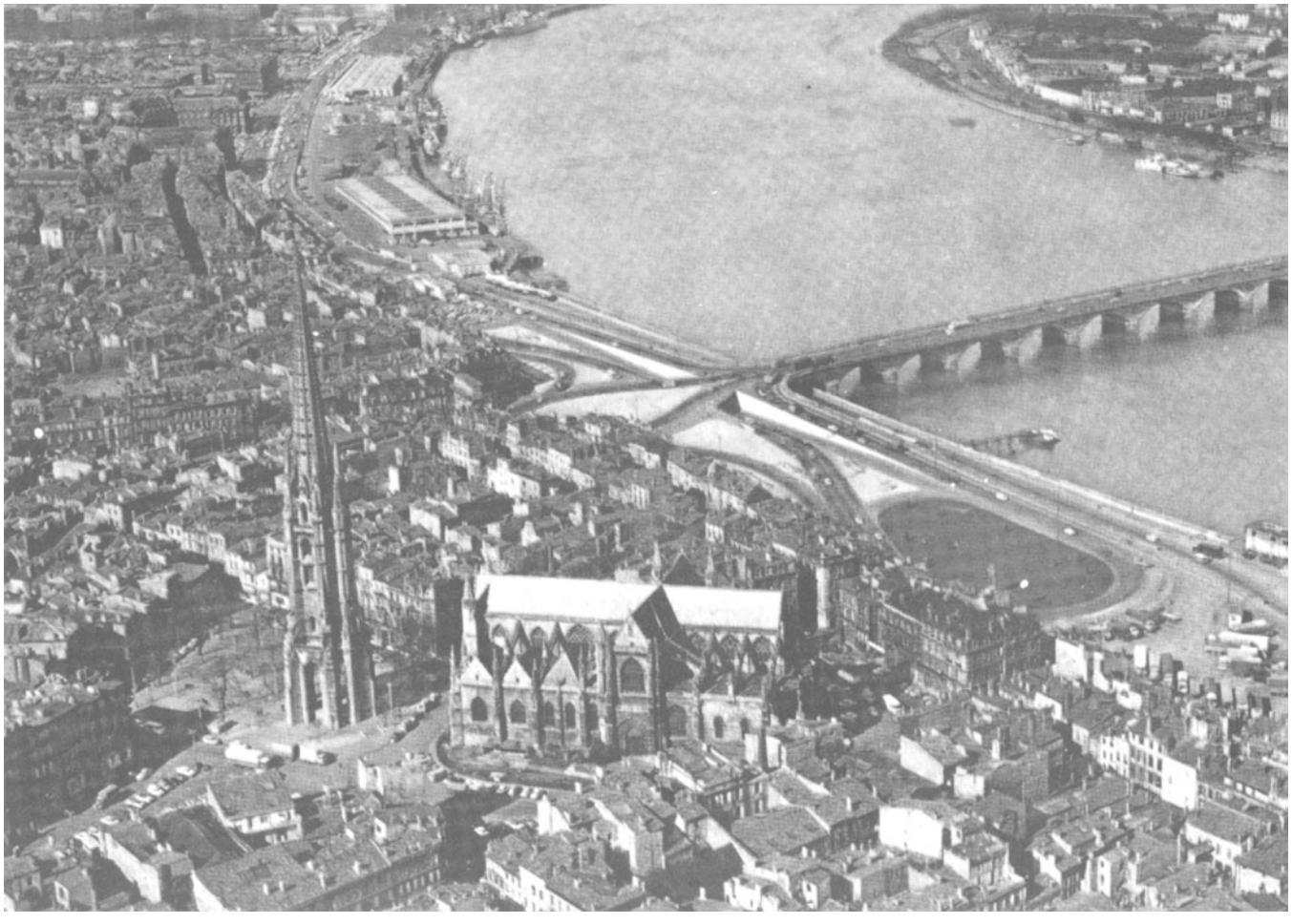
Both sides of the river below Pont de Pierre are quayed with wharves which have depths of 6.5 to 9m alongside. The berths on the W bank are used only by passenger and military vessels.

Two wet basins, connected by a passage 25m wide, are situated on the W side of the river, but are no longer used by commercial vessels. These basins, which were a former German submarine base, are maintained at a depth of 5m and are entered through a lock, 152m long and 22m wide. The inner basin is reported to be used by yachts, pleasure craft, and fishing vessels. The outer basin is reported to be only used for repairs and outfitting.

At Bassens, there is 3,000m of total quayage, with alongside depths of 9.5 to 12m. Partly-laden vessels up to 80,000 dwt and 250m in length can be handled, with drafts of 9.5 to 11m, depending on the tidal conditions.

There are facilities for general cargo, ro-ro, container, bulk, reefer, and passenger vessels. In addition, there are extensive repair facilities, with three dry docks. The largest is 247m long, 37m wide, and can handle vessels up to 55,000 dwt.

It was reported (1993) that a channel deepening project is being carried out which will allow vessels up to 120,000 dwt, partly laden, and 270m in length to be handled at the port.



Bordeaux

La Gironde to L'Adour (Bayonne)

3.7 Pointe de la Negade (45˚28'N., 1˚10'W.), marked by a beacon, is the S entrance point of the La Gironde estuary. It is located at the N end of a long and unbroken coast of sand dunes covered with fir trees. In bad weather, this section of coast breaks heavily and affords no shelter.

A main light is shown from a prominent light, 24m high, standing at Hourtin, 4.5 miles S of Le Contau. A disused tower, 29m high, and a framework mast, 58m high, stand close S of it. It has been reported that only the top of the main light is visible above the fir trees.

Tides—Currents.—Off the coast S of the La Gironde estuary, a current sets N at a distance of about 5 to 6 miles offshore. It may attain a rate up to 0.5 knot, particularly with S winds, but is halted by N winds which also usually form a short and choppy sea. Occasionally, within 1 mile of the coast, a countercurrent may be felt setting S at a rate up to 0.5 knot.

After W gales in winter, especially of some duration, strong currents may set along the coast from the head of the Bay of Biscay. They may sometimes attain rates up to 4 knots or more and vessels should use caution in these conditions.

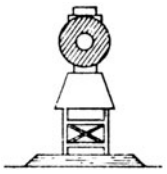
Cap Ferret (44˚37'N., 1˚15'W.) is located at the S end of a low-lying tongue of land, 56 miles S of Pointe de la Negade. A main light is shown from a prominent tower, 52m high, standing on the cape. A conspicuous green water tower, 50m high, stands 0.3 mile N of the light and a signal station, consisting of a grey house surmounted by a tower, stands 1 mile S of it. The cape forms the N side of the entrance to Bassin d'Arcachon.

Caution.—Several wrecks, some dangerous, lie off the coast between Pointe de la Negade and Cap Ferret and can best be seen on the chart.

A firing danger area (Centre d'Essais des Landes) used by military experimental establishments to test guided missiles and other weapons extends up to 45 miles seaward between Pointe de la Negade and Capbreton (43˚39'N., 1˚27'W.). Navigation may be occasionally prohibited within 12 miles of the coast in some parts of this area. For additional details, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean, Baltic Sea, North Sea, and the Mediterranean Sea.

Experimental projects are carried out within the danger area and require several temporary targets, markers, and buoys. Vessels should not enter the danger area without up to date information on these activities. Numerous structures connected with the danger area stand along the shore and are conspicuous but are easy to confuse. These include a watch tower, with a water tower 1 mile N, standing at Biscarrosse-Plage, 6.5 miles S of Pointe d'Arcachon; a radio tower standing 10 miles S of Pointe d'Arcachon; Biscarrosse Beacon, consisting of a black circular mark on a white stand, situated near the shore, 12 miles S of Pointe d'Arcachon; and a framework pylon, 100m high, standing 16 miles S of Pointe d'Arcachon.

3.8 Bassin d'Arcachon (44˚42'N., 1˚09'W.), an extensive landlocked basin, is mostly encumbered by muddy sand banks which are intersected by several narrow channels. A main channel, entered 3 miles S of Cap Ferret, leads through an inlet into the basin. Arcachon, an important center for deep sea and coastal fishing vessels, lies on the S shore of the basin. The



Biscarrosse Beacon

area is a popular resort and there are extensive facilities for yachts and oyster boats. Constantly-shifting sand banks obstruct the entrance and, especially after bad weather, occasionally form substantial drying islands.

Lighted Buoy ATT-ARC, moored 4.3 miles SW of Cap Ferret, marks the seaward approach to the main entrance channel, which has a least depth of 4m over the bar. Buoys marking this channel are moved regularly to conform with the shifting banks and local knowledge is required. The tidal currents at the bar attain rates up to 2 knots on the flood and up to 3.5 knots on the ebb. It is reported that the tidal currents in the inner part of the entrance channel sometimes attain rates up to 6 knots. The bar is sometimes impassable during onshore winds and impracticable during a considerable number of days in winter. In rough weather, the buoys are often difficult to identify, but the channel can usually be distinguished by the breakers on either side.

It is advised not to use this channel less than 3 hours after HW.

A submarine water pipeline extends from Cap Ferret across the entrance of the inlet.

Pointe d'Arcachon, located 6 miles S of Cap Ferret, is the low S entrance point of the inlet. A prominent building, with three domes, stands on this point and forms a good mark when close in. An aeronautical radiobeacon is situated 6 miles E of the point. The great dune of Pyla, the white slopes of which contrast strongly with the neighboring pine woods, stands 4.5 miles SSE of Cap Ferret and can be seen in good weather from a considerable distance.

3.9 Arcachon (44˚40'N., 1˚10'W.), a small harbor protected by breakwaters, is situated on the S side of the basin. It is dredged to a depth of 2m and has extensive facilities for fishing vessels and yachts. Tides here rise about 4.2m at springs and 3.2m at neaps. The harbor may be contacted by VHF; local fisherman are available as unofficial pilots. Vessels can anchor, in depths of 9 to 20m, muddy sand and good holding ground, nearly anywhere in the roadstead which fronts the town.

Capbreton (43˚39'N., 1˚27'W.) is located 52 miles SSW of Pointe d'Arcachon. The coast between offers no good shelter and several obstructions and wrecks lie offshore.

A submarine outfall pipeline extends 3.5 miles WSW from a point on the coast, 1.5 miles S of Pointe d'Arcachon; a fish haven lies at the seaward end and it is marked by a lighted buoy moored 2 miles offshore.

3.10 Contis Light (44˚06'N., 1˚19'W.) is shown from a conspicuous tower, 42m high with a dwelling, standing isolated on the shore, 27.5 miles S of Pointe d'Arcachon. The

coast in this vicinity consists of a line of sand dunes backed by low hills covered by fir trees.

Capbreton (43˚39'N., 1˚27'W.), a small harbor, lies at the mouth of the River Boudigua and is protected by breakwaters. It nearly dries at LW and is used by fishing vessels, yachts, and pleasure craft up to 20m in length, 5m beam, and 2m draft. Tides here rise about 4m at springs and 3.4m at neaps. A channel, dredged to a depth of 1.5m, leads between drying banks to the harbor, but local knowledge is required. The harbor, which can be contacted by VHF, is easily identified by a line of conspicuous buildings standing along the seafront at the S side of the entrance.

Caution.—An area, within which anchoring is prohibited, is situated off the entrance to the harbor and may best be seen on the chart.

Fosse de Capbreton (Gouf de Capbreton) is a large submarine canyon which extends seaward from off the entrance to the harbor. The depths decrease rapidly as a vessel passes over this phenomenon. Depths of 100m and 50m lie 1 mile and 0.3 mile WNW, respectively, of the harbor entrance.

During heavy weather, the sea follows the general direction of the canyon, and because the depths are great, does not break; however, at the edge of the canyon, the sea is confused and sometimes dangerous.

L'Adour (Bayonne)

3.11 L'Adour (43˚32'N., 1˚31'W.), a river, is entered 8.5 miles SSW of Capbreton. It is navigable by ocean-going vessels as far as Bayonne, 3.5 miles within the entrance, and then by river craft as far as Pouy, 37 miles above the port. The river has several tributaries which are navigable for short distances; La Nive, the most important one, joins close above Bayonne. The industrial town of Le Boucau stands on the N bank of the river, about 1 mile from the entrance.

Tides—Currents.—Tides inside the river entrance rise about 4.3m at springs and 3.3m at neaps.

At the river entrance, the flood tidal current runs E and SE at a rate of 2 to 4 knots at springs. The ebb current runs W at a rate of 3 to 5 knots at springs. During heavy floods in the upper river, the ebb current may attain rates of 6 to 7 knots at the entrance.

Depths—Limitations.—Depths in the approaches to the river are deep and to the N, except for Fosse de Capbreton, are fairly uniform.

Plateau de Saint Jean de Luz, with a least charted depth of 10m, consists of a chain of rocky shoals which lies from 1 to 4 miles offshore between the entrance to L'Adour and Cabo Higuer. Vessels should give this chain, which is unmarked, a wide berth as the sea breaks over the shallower parts in heavy weather.

The river is fronted by a bar of sand and gravel which continuously changes in position and width. Depths over the bar vary with the season but during the summer there is generally a least depth of 9.5m; in winter, less water may be available after W gales and a least depth of 6m has been reported.

Aspect.—As the N coast of Spain is bordered by high mountains, vessels can, in good weather, estimate their positions by bearings of the summits. The most prominent mountains are La Rhune (43˚18'N., 1˚38'W.) and Penas de Aya (43˚17'N., 1˚47'W.), which stand 14 miles and 18.5 miles SW, respectively, of the river entrance. Several buildings and a radio mast are situated on the conical summit of La Rhune. From the N, Penas de Aya appears like a crown as it has several peaks on the summit but it loses this appearance and shows three irregular peaks when seen from the NNE through E.

On closer approach, the chimneys of Forges de l'Adour, standing 1 mile ENE of the river entrance, are conspicuous because of their size and smoke. At night, the reddish glare from this smoke can be seen for a considerable distance in good weather.

The river entrance is protected by breakwaters, the principal one extends 0.5 mile W from the N shore. A prominent signal station, consisting of a circular tower, 14m high, stands on the S side of the river entrance and a conspicuous silo stands on the N bank, 1 mile E of the it.

Lighted Buoy BA, moored 1 mile NW of the outer breakwater head, marks the seaward approach. The entrance and river fairways are marked by beacons and buoys and indicated by lighted ranges which may best be seen on the chart. These ranges are moved as required to meet changes in the channel and are only lit when navigation is practical.

Pilotage.—Pilotage is compulsory for vessels 60m or more in length within 3 miles of the coast between latitude 43˚50'N and the Spanish-French territorial water boundary (43˚24'N., 1˚41'W.).

Vessels should send an ETA at least 12 hours in advance, before 1800 for vessels arriving the next morning, through Bordeaux-Arcachon (FFC). Pilots can be contacted on VHF channel 12 and board between 0.5 and 1 mile NW of Lighted Buoy BA. By day, pilots generally board between 4 hours before to 1 hour before HW. At night, pilots board at the time of HW, although sometimes pilotage operations may occur outside the times stated above. Entry into and exit from the port may be suspended during winds of force 5 and above.

Regulations.—A Mandatory Access Channel, the limits of which are shown on the chart, leads from 7 miles seaward between the W and NW to the river entrance. All vessels over 1,600 grt and carrying hydrocarbons or dangerous cargo must report their entry into this channel and maintain a listening watch on VHF channel 16.

Such vessels obliged to use this access channel should, in addition to contacting the L'Adour Signal Station, also report by VHF to Socoa Coastguard Station (43˚24'N., 1˚41'W.). Other vessels intending to use this channel should maintain a listening watch on VHF channel 16 before entering the channel.

Anchorage.—Large vessels may anchor, in depths of 35 to 39m, sand and gravel, about 2 miles NW of the outer breakwater head. Vessels are advised not to anchor within the river.

Caution.—In autumn and winter, the landmarks at the mouth of the river are occasionally obscured by fog.

A dumping ground area, indicated on the chart, lies about 1 mile WSW of the river entrance.

A restricted area, the limits of which are shown on the chart, lies centered, with a radius of 1 mile, on Lighted Buoy BA. Another restricted area, the limits of which are shown on the chart, extends up to 0.5 mile offshore and 2.5 miles SW of the

river entrance. Anchoring and fishing are prohibited within both of these areas.

During winter months, the river entrance may be closed due to the very heavy swell.

Several wrecks, some dangerous, lie in the approaches to the river entrance and may best be seen on the chart.

Bayonne (43˚30'N., 1˚29'W.)

World Port Index No. 37230

3.12 The industrial port of Bayonne lines both sides of L'Adour between its mouth and the junction of La Nive, 4 miles upstream. The bar at the entrance to the river is the controlling depth for entry to the port.

Depths—Limitations.—An extensive marina is situated on the S side of the river, 0.7 mile within the entrance, and can handle yachts up to 3m draft.

The S bank of the port has 760m of total quayage, with depths up to 8m. The N bank has 1,525m of total quayage, with depths up to 10m.

There are facilities for tanker, chemical, general cargo, and bulk vessels. In summer, vessels up to 180m in length and 8.5m draft can be handled within the port. In winter, vessels up to 150m in length and 8m draft can be handled. During winter, normal drafts may be reduced under certain conditions and vessels should contact the port authorities for information.

Bayonne Berth Information

Name	Length	Depth
Deep Water Quay (Quai Socaddour)	360m	10.0m
Ouai European	185m	10.0m
Quai M. Forgues	160m	10.0m
Quai L. Tramut	167m	10.0m
Quai J. Letellier	100m	6.9m
Quai Carnot	100m	6.0m
Quai Maisica	185m	7.0m
Quai Saint Bernard	120m	7.0m
Quai E. Castel	195m	8.0m
Quai A. Gommes	150m	7.0m
Quai E. Foy	300m	5.5m
Raffineries du Midi Oil Berth	120m	4.0m
St. Gobain Oil Berth	180m	7.0-8.0m

Caution.—During stormy weather, there is a considerable scend at the berths within the lower section of the port. If conditions are very bad, particularly at LW, it is sometimes necessary for vessels at these berths to move upstream. Heavy moorings are available from the port authorities.

L'Adour to Puerto de Pasajes

3.13 Pointe St. Martin (43˚30'N., 1˚33'W.) is located 2.5 miles SSW of the L'Adour and a line of uniform sand dunes stands between them. To the SW of this point, the character of the coast changes to rocky cliffs which are bordered by a narrow sandy beach and backed by mountainous inland terrain.

Pointe St. Martin Light, formerly known as Biarritz Light, is shown from a conspicuous tower, 47m high, standing on the point. An aeronautical light is situated 1.5 miles SE of the light. It is occasionally shown and is only visible within a small sector due to heavy vegetation.

Pointe de Biarritz, fronted by rocks and shoals, is located 1 mile SW of Pointe St. Martin. Port des Pecheurs, a small drying harbor, is situated on the N side of this point and is used by fishing boats. It consists of two tidal basins and a small wet dock. The entrance is protected by a breakwater and indicated by a lighted range.

Anchorage.—During the summer, temporary anchorage is available off Biarritz. Ocean-going vessels may anchor, in depths of 12 to 13m, 0.6 mile W of Pointe de St. Martin. This anchorage should be vacated at the first sign of any strength in the wind from seaward.

Off-lying dangers.—Loutrou, the N head of Plateau de St. Jean de Luz, lies about 1.5 miles N of Pointe St. Martin. It has a least depth of 11m and breaks in heavy W gales. Occasionally, wave recorder buoys are moored in the vicinity of Plateau de St. Jean de Luz.

Basse des Esclaves, a rocky shoal, lies about 2.8 miles WSW of Pointe St. Martin and is the shallowest part of the N section of Plateau de St. Jean de Luz. It has a least depth of 10m and sometimes breaks in heavy weather.

3.14 Baie de St. Jean de Luz (43˚24'N., 1˚41'W.) is entered between Pointe Sainte Barbe, 6.4 miles SW of Pointe St. Martin, and Fort du Socoa, 1 mile WSW. It is protected by three breakwaters, the middle one of which is detached. The passage at the E side of the detached breakwater is only used by local craft. The passage at the W side is the main entrance channel. It has a least depth of 12m and is indicated by a lighted range.

Although the approaches to the bay are deep, the outer banks break during W gales and should be avoided. Mabessin, with a least depth of 9.8m, lies about 0.8 mile WNW of Pointe Sainte Barbe and breaks in a heavy swell; vessels are advised not to pass close to this rock during bad weather. Les Esquilletac, with a depth of 4.8m, lies about 0.5 mile N of Pointe Sainte Barbe and, along with the shoals inshore, breaks with great strength in heavy gales. A chain of foul ground and dangers extends up to 1.3 miles NE of Les Esquilletac and terminates in a group of rocks which have a least depth of 2m.

Fort du Socoa consists of a large round tower and is conspicuous. A prominent light, 12m high with a dwelling, and a prominent coastguard signal station stand close W of the fort. Tour Bordagain stands in the hills SW of the signal station and is conspicuous.

The Riviere La Nivelle flows into the bay and separates the towns of St. Jean de Luz, on the E shore, from Ciboure, on the S shore. There are several small yacht marinas situated along the shores of the bay.

Entrance to Baie de St. Jean du Luz from W

St. Jean de Luz (43˚23'N., 1˚40'W.), a small tidal harbor, is entered through a dredged channel which has a depth of 3m and passes between two training walls. It has depths of 3 to 5m and is mainly used by fishing vessels and pleasure craft with drafts up to 2.5m. Tides here rise about 4.2m at springs and 3.2m at neaps. Pilotage is provided from L'Adour and pilots will board close outside the entrance to the bay.

It was reported (1991) that vessels could only enter with drafts up to 1.6m due to silting and shoaling at the harbor entrance.

Anchorage.—Vessels may anchor, in a depth of 37m, shingle and good holding ground, just outside the entrance to the bay. Anchorage inside the bay is available under the direction of a pilot, in depths of 7 to 9m, sand and gravel, SE of the detached breakwater.

Caution.—Numerous pleasure craft may be encountered within the bay.

Areas within the bay are reserved for yacht moorings and square dipping fishing nets.

3.15 Rada de Higuer (Baie de Fontarabie), lies 5 miles WSW of Baie de St. Jean de Luz. It is entered between Cabo Higuer and Pointe Sainte Anne, 1.6 miles ESE.

The boundary between France and Spain passes through the bay; in its SW part, a neutral area has been established for the use of vessels of both nations. The limits of this anchorage area are indicated by the alignment of several white beacons which stand on the shore.

Pointe Sainte Anne (43˚23'N., 1˚45'W.) is located 4.5 miles WSW of Baie de St. Jean de Luz. A conspicuous observation tower stands on the summit of this point. Les Briquets, a reef which dries 0.4m, extends up to 0.8 mile N of the point and is generally steep-to on its N side.

Cabo Higuer (43˚24'N., 1˚47'W.), a bare and rugged cape, forms the W entrance point of the bay. A main light is shown from a prominent tower, 21m high, standing on this cape. A partly ruined but prominent castle stands at the top of an escarpment, close SE of the light.

Isla Amuitz, a rocky conical islet, is located close N of the cape and connected to it by a drying reef. This islet, which is fronted by foul ground, appears, except from the E or W, as part of the mainland.

Banc Chicarvel, with a least depth of 13.3m, lies in the entrance to the bay, 1 mile E of Cabo Higuer. Bajo Iruarri, with a least depth of 7.9m, lies 0.6 mile SW of Banc Chicarvel. During rough weather or a heavy swell, vessels entering the bay should pass WNW of these two rocky banks.

A small harbor of refuge protected by breakwaters is situated at Gurutzeandi, on the SE side of Cabo Higuer. There are depths of 5 to 6m within the harbor and the entrance is 30m wide. It is mainly used by fishing vessels and small craft.

The Ria de Fuenterrabia is entered between two breakwaters at the head of the bay, but is encumbered by shifting sand banks. The buildings of Hendaye, a town standing on the E bank of the river, and Fuenterrabiand, a town standing on the W bank, are conspicuous. A number of small harbors within the river are used by pleasure craft and fishing vessels.

Anchorage.—Temporary anchorage may be obtained, in depths of 10 to 13m, sand and mud, W of Bajo Iruarri; there is good shelter here from W and S winds, but those from NE raise a heavy sea and render this roadstead unsafe.

3.16 **Monte Jaizquivel** (43˚21'N., 1˚51'W.) is a broad and uncultivated mountainous mass which lies between Cabo Higuer and the entrance to Puerto Pasajes, 7 miles WSW. Five stone towers, each 9m high, are situated along its length, but only four of them are visible from seaward. The summit of this mass, 548m high, is somewhat rounded and is surmounted by the ruins of a fort that are not easily identified from a distance.

In addition to Monte Jaizquivel, La Rhune and Penas de Aya, both previously described in paragraph 3.11, form excellent marks in this area.

Monte Urdaburn (43˚14'N., 1˚54'W.), with three flat summits, stands 10.5 miles SW of Cabo Higuer. It rises to a maximum elevation of 610m and can be seen from a considerable distance to seaward.

Tides—Currents.—In this area the currents generally follow the direction of the coast. During winter, when W winds predominate, the currents set E towards the head of the Bay of Biscay and may sometimes attain rates of 4 to 5 knots. In summer, with prevailing NE breezes, the currents are weak and set W or WNW, attaining rates of 1 to 2 knots.

Puerto de Pasajes (43˚19'N., 1˚55'W.)

World Port Index No. 37290

3.17 The port of Pasajes is formed by an extensive natural basin which has been improved by dredging and wharf construction. It is a commercial harbor, a fishing center, and a port of refuge for vessels seeking shelter between Brest and Bilbao. The port lies 5 miles W of the French-Spanish border and 3 miles E of the city of San Sebastian.

Winds—Weather.—Because of the narrow entrance and the surrounding high land, the harbor is always calm regardless of

the sea conditions outside and the violent winter gales within the Bay of Biscay.

During spring and autumn, thick fog may occur.

Tides—Currents.—Tides rise about 4.1m at springs and 3.1m at neaps.

Under normal conditions, the tidal currents within the harbor are weak.

Depth—Limitations.—The fairway of the entrance channel is dredged to a depth of 10m over a width of 70 to 100m. There are 3,000m of total commercial quayage and 250m of private quayage within the harbor. The port has facilities for ro-ro, general cargo, container, tanker, and bulk vessels. In addition, there are extensive facilities for fishing vessels.

The narrowness of the fairway imposes restrictions on the size of vessels which are allowed to enter the port. Generally, vessels up to 185m in length and 9m draft can enter. It was reported (1993) that a vessel of 174m in length and 10.6m draft had been handled.

Puerto de Pasajes Berth Information

Name	Length	Depth
Buenavista Quay	761m	10-12m
Molianao Quay	310m	10m
Capuchinos Quay	298m	10m
Lezo 1 Quay	298m	10m
Lezo 2 Quay	150m	10m
Lezo 3 Quay	150m	8m
Avanzado Norte Quay	63m	6m
Avanzado Oeste Quay	120m	6m
Herrera Quay	400m	5m
Reloj Quay	240m	5m
Iberduero Quay	250m	10m

Aspect.—The harbor is entered via a narrow pass, 0.7 mile long, cut through the mountains. It has a sheltered interior and resembles a fjord. The seaward entrance of the pass is reported to be only visible from the N or NNW.

In the outer approaches, La Rhune and Penas de Aya, previously described in paragraph 3.11, are visible.

The entrance channel leads between Punta del Arando Chico and Punta del Arando Grande, 220m E. The land on both sides is rugged and rises steeply to Monte Grandes Arrocas, at the E side, and Monte de las Cruces, at the W side.

Punta del Arando Chico, the extremity of which is a narrow ridge, rises to a remarkable rocky mound, 148m high, known as Fronton La Plata. A main light (Cabo La Plata) is shown from a lantern on a building, 13m high, standing on the summit of this mound.

Punta del Arando Grande, marked by a light, is formed by several rocks which have been joined together and give the appearance of a breakwater. The outer extremity of these rocks is marked by a light. El Fraile, a steep bluff, rises close E of the inner end of these rocks and is marked by a conspicuous rock which has the shape of a monk's hooded cloak. A signal station stands on Atalaya de Pasajes, the summit of El Fraile, and is equipped with a racon.

A lighted range and a directional sector light indicate the approach to the entrance channel and may best be seen on the chart.

Bancha del W, a detached reef marked on its E extremity by a light, lies about 200m N of Punta del Arando Chico. It has a least depth of 4m and acts as a breakwater, sheltering the approach. A rock, with a depth of 6.9m, lies close E of this reef and close W of the entrance channel. Bancha del E, another detached reef, is marked on its W extremity by a light and lies about 200m NE of Punta del Arando Grande. It has a least depth of 1.4m and also acts as a breakwater.

La Redonda, 3.2m high, is located 80m offshore, about 300m WNW of Punta del Arando Chico. This rock is quite steep and makes a good mark, but is usually covered at HW.

Pilotage.—Pilotage is compulsory. Vessels should send an ETA at least 24 hours in advance and contact the pilot on VHF channel 14 at least 1 hour before arrival. In good weather, the pilot generally boards about 1 mile N of the entrance. During poor sea conditions, the pilot launch will remain inside the entrance channel and vessels will be instructed by radio.

Regulations.—Vessels of over 140m in length may only enter by day.

Due to the narrowness of the entrance channel, the passage of ocean-going vessels is only allowed in one direction at a time and is controlled by the port authorities.

Anchorage.—Vessels are recommended to anchor outside only in good weather and they should contact the pilot station for instructions before doing so. Generally, vessels can anchor, in depths of 35 to 60m, sand and mud, E of the approach range alignment.

Caution.—Numerous fishing vessels may be encountered in the approaches to the port.

The port may close due to thick fog which occurs occasionally at dawn during spring and autumn days.

Puerto de Pasajes to Bilbao

3.18 Punta Atalayero (43˚20'N., 1˚58'W.), a high and sheer point, is located 1.4 miles W of the entrance to Puerto de Pasajes and is fronted by rocks. Bajo Pekchilla, an isolated reef, lies 0.3 mile WNW of this point. It has a least depth of 0.2m and breaks in a heavy swell.

Monte Ulia backs Punta Atalayero and falls steeply to the sea. It rises to a height of 233m; a prominent radio mast, 90m high, stands on the summit.

Punta Mompas, 40m high, is located 0.5 mile WSW of Punta Atalayero. It is composed of rocky faults fronted by a reef. The ruined tower of an old signal station stands 0.3 mile ESE of this point, and a prominent red house stands on the slopes of Monte Ulia, close E of it.

Ensenada de la Zurriola is entered between Punta Mompas and the N end of Monte Urgull, 1 mile WSW. The head of the bay, into which flows the Rio Urumea, is formed by a long sandy beach. This beach dries up to 200m offshore and breaks heavily in NW gales. Its W part is protected by a seawall which extends to the river mouth.

The Rio Urumea is fronted by a bar which nearly dries. At HW in good weather, boats can cross it and reach the town of

Astigarraga, 3 miles above the entrance. Barrio de Gros, a suburb of San Sebastian situated on the E bank of this river close within the entrance, is connected to the city by several bridges.

Monte Urgull, a conspicuous hill, 137m high, stands on the E side of the entrance to La Concha de San Sebastian and is connected to the mainland by a low sandy isthmus, on which the city of San Sebastian is situated. Castillo de la Mota, surmounted by a large statue of Christ, stands on the summit and is conspicuous. A disused signal station, consisting of a square tower, stands on the NW slope of the hill and is visible from a considerable distance seaward.

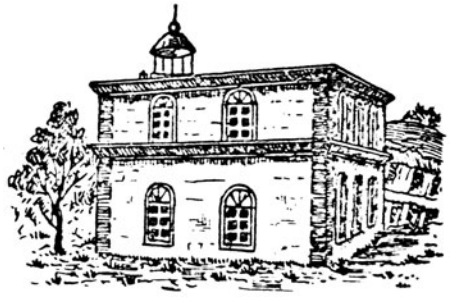
A rocky patch, with a least depth of 8.8m, lies 0.2 mile NW of the NW side of Monte Urgull and should be passed to the N.

Monte Urdaburu (43˚14'N., 1˚54'W.) stands 6.5 miles SE of Monte Urgull. Its summit rises to a height of 608m and is formed by two flat peaks.

Punta Arabicobaja (43˚20'N., 2˚01'W.), the W entrance point of La Concha de San Sebastian, is located 0.8 mile WSW of Monte Urgull. It is backed by Monte Igueldo, which attains a height of 182m. San Sebastian Light, also known as Igueldo, is shown from prominent tower with a dwelling, 13m high, standing on the N slope of this hill. A disused light, 18m high, and a large hotel stand on the summit of the hill and are conspicuous.

Monte Mendizorrotz, 390m high, stands 3 miles WSW of Monte Igueldo. Its summit, formed by a sharp peak, is an excellent mark from seaward.

Isla de Santa Clara (43˚19'N., 2˚00'W.), 45m high, lies in the entrance to La Concha de San Sebastian and is nearly connected by a drying reef to the E extremity of Monte Igueldo. A light is shown from a lantern on a dwelling, 10m high, standing on the summit of the island. La Bancha, a detached rocky shoal, lies about 300m NNW of the island. It has a least depth of 5.5m and breaks in any swell. Large vessels should only pass E of this shoal.



Isla de Santa Clara Light

3.19 San Sebastian (43˚19'N., 2˚00'W.), a major resort, stands on the shores La Concha de San Sebastian, a bay formed as its name implies like a sea shell. It is sheltered by Monte Urgull and Monte Igueldo. The entrance channel, which is indicated by a lighted range, leads E of Isla de Santa Clara. A small drying harbor with two tidal basins is situated at the NE corner of the bay; mooring buoys are situated close SE of the island. Tides in the bay rise about 4.2m at springs and 3m at neaps. The harbor is used by fishing vessels, yachts, and pleasure craft up to 60m in length, 9m beam, and 3.3m draft. Local knowledge is required.

In favorable weather, vessels may anchor, in depths of 35 to 40m, NNW of Isla de Santa Clara.

3.20 The **Rio de Orio** (43˚17'N., 2˚07'W.), fronted by a bar, flows into the sea 5.5 miles WSW of Monte Igueldo. The river is entered between Punta Talaycoeguia, at the W end of the Igueldo Range, and an unnamed point, 0.3 mile W. Both sides of the entrance are high and rocky with the river mouth forming a distinctive break in the coastal range. Cruz de la Barra, a conspicuous white cross, stands on the W side of the entrance. The E side of the river is retained by a training wall which extends 1.2 miles upstream to the town of Orio. There are depths of 0.5m on the bar and 0.1m in the channel which is marked by beacons. A cantilever bridge, with a vertical clearance of 17.5m, spans the river 0.5 mile above the entrance. Small coasters and fishing vessels with local knowledge can enter the river at HW and reach Orio, but caution is necessary as the bar fronting the entrance and the channel frequently shifts.

Isla Malla-arria (43˚18'N., 2˚09'W.), 12m high, is the outermost of several islets which extend up to 0.2 mile offshore, 0.7 mile WNW of the Rio de Orio.

An ore-loading appliance situated on this islet is connected by a transporter cable-way to the mines, 3.5 miles S. Four mooring buoys used by vessels loading ore lie close off the N and E sides of the islet; the berth can only be used in calm weather.

A lighted buoy marking the seaward end of an outfall pipeline is reported to be moored 0.3 mile N of the islet.

Monte Amesti, 192m high, rises 0.5 mile SE of Isla Malla-arria and is prominent. The town of Zarauz stands in a low and sandy bight, 1.2 miles W of this hill. Playa de Zarauz, the white beaches of which form a popular resort, fronts the town and is easily identified from offshore.

3.21 Isla de San Anton (43˚19'N., 2˚12'W.), 112m high, is located 3 miles WNW of the Rio de Orio. This island has steep cliffs on its NW side and is connected to the mainland by a narrow strip of reclaimed land. A dangerous shoal, with a depth of 4.6m, lies close N of the N end of the island and breaks in bad weather.

There are two peaks on the island; the prominent ruins of a castle stand on the S one. A main light is shown from a conspicuous tower, with a dwelling, 14m high, standing on the lower N peak.

Puerto de Guetaria (43˚18'N., 2˚12'W.), a small harbor, is situated at the S end of Isla de San Anton and at the E side of the reclaimed land which connects the island to the mainland. It is protected by two breakwaters and has an outer entrance, 50m wide. The harbor consists of two tidal basins with depths of 1.5 to 6m and is used by fishing vessels, yachts, and pleasure craft.

The town of Guetaria is situated on the E slope of a hillock at the S end of the reclaimed land. It is the birthplace of Juan Sebastian de Elcano, the first person to circumnavigate the world.

Monte Izarraitz, with its flat summit rising to a height of 1,027m, stands 7 miles SSW of the harbor and is conspicuous

from seaward. Monte Garate, 278m high, stands 1 mile S of the town and is also a good mark.

Vessels can anchor, in a depth of 13m, sand and good holding ground, about 200m E of the head of the N breakwater.

Guetaria Light

3.22 Zumaya (43˚18'N., 2˚15'W.), a small harbor, lies 0.5 mile within the Ria de Zumaya which is entered 2 miles W of Isla de San Anton. It is used by small coasters, fishing vessels, and pleasure craft. A main light is shown from a tower, with a dwelling, 12m high, standing on a flat-topped islet at the W side of the river mouth.

The river is fronted by a bar, with a depth of 0.3m, and the entrance channel, which is formed by a breakwater and a training wall, dries in several places. A commercial wharf at the harbor, which was dredged (1968) to a depth of 2.4m alongside, is equipped to handle cement. The river could generally be entered by vessels with local knowledge up to 3m draft at HW, but silting at the bar has been reported.

Ensenada de Deva (43˚18'N., 2˚21'W.), a small bay, lies 4.5 miles W of the Ria Zumaya. It is entered between Punta Aitzandi, on the E side, and Punta Arrilaban, 0.5 mile W. The former, 131m high, consists of a sheer rock cliff, and being white in color, constitutes a good mark from offshore. Monte Anduz, 612m high, stands 2.5 miles SE of the bay and is prominent. Monte de Santa Catalina, 197m high, rises close S of Punta Aitzandi. A conspicuous white chapel stands on its summit.

The Rio de Deva flows into the SW corner of the bay and a small harbor is situated 0.4 mile above the mouth. This harbor is little frequented as the river is fronted by a drying and shifting bar. Small craft with local knowledge can enter the channel, which is 46m wide. It dries for most of its length and has depths of 3.8m at springs and 2.5m at neaps.

3.23 Puerto de Motrico (43˚19'N., 2˚23'W.), a small harbor, lies at the head of an inlet, 1.3 miles WNW of Ensenada de Deva. The town backing the harbor stands on the steep slope of a hill and has numerous prominent white houses which are visible from seaward. The harbor is protected by two moles which form an entrance, 23m wide. It has a depth of 4m in the main basin and is mostly used by fishing vessels. The entrance channel is indicated by a lighted range, but local knowledge is required as the shores of the inlet are fringed with rocks. Heavy seas off the entrance are prevalent in winter and render the harbor unsafe; it should only be used during the summer months.

Puerto de Ondarroa (43˚19'N., 2˚25'W.), a small harbor, lies in the W part of a shallow bay, 1.8 miles WNW of Motrico. The bay is entered between Punta Saturraran, at the SE side, and Punta Barracomuturra, 0.3 mile WNW. The harbor, which is extensively used by fishing vessels, is protected by an outer breakwater extending from Punta Barracomuturra. The entrance channel has a least depth of 3m over the bar and the main part of the harbor has dredged depths of 2 to 5m. Local knowledge is required for entering and unofficial pilots are available.

A racon has been installed at the light structure on the head of the outer breakwater.

3.24 Isla de San Nicolas (43˚22'N., 2˚29'W.), 51m high, lies close off the coast, 4 miles NW of Puerto de Ondarroa. The ruins of a battery stand on its summit. This islet is prominent from the E, but not easy to identify from the W.

Puerto de Lequeitio (43˚22'N., 2˚30'W.), a small harbor, lies in the SW corner of a shallow basin which is entered by a narrow channel W of Isla de San Nicolas. An outer harbor is formed between a breakwater and a training wall which connects the S end of Isla de San Nicolas to the mainland. An inner harbor is formed by two moles and has an entrance 35m wide. There are depths of 4m in the entrance channel and in the harbor. Fishing boats and small coasters can enter, but local knowledge is required. Unofficial pilots are available.

Monte Calvario, 119m high, stands with a prominent conical peak at the head of the harbor.

During S winds, medium-sized vessels can obtain temporary anchorage, in depths of 12 to 14m, sand and stone, about 300m E of the N extremity of Isla de San Nicolas; this anchorage is unsafe in N winds.

3.25 Cabo de Santa Catalina (43˚23'N., 2˚31'W.), 43m high, is located 1 mile NW of Lequeitio. It is a cliffy point and rises steeply from the sea. A main light is shown from a tower, with a dwelling, 13m high, standing on the point.

Monte Negro, 389m high, stands 1 mile WSW of the point and is conspicuous because of the steep cliffs on its seaward side.

Ensenada de Oguella indents the coast between Cabo de Santa Catalina and Punta Apical, 2.5 miles WNW. The shores of this bay are steep, rocky, and bordered by reefs and shoal water. A heavy sea sets into this bay during N gales and vessels are advised to avoid it.

Punta Apical (Punta de Ea), rocky and fringed by a reef, is located 2.2 miles WNW of Cabo de Santa Catalina. This point is inconspicuous, but may be identified by a prominent house, surrounded by trees, standing on its summit. The sea breaks heavily to seaward of this point; which should be given a wide berth.

Islote Cay-arri, a steep and rocky islet, lies close offshore 0.4 mile W of Punta Apical. The shore extending to the W of this islet is rocky and indented by several coves.

Punta Ermicho, rocky and steep, is located 1.7 miles W of Punta Apical and is backed by somewhat lower land. The town of Nachitua stands on the heights and forms a prominent mark from seaward.

Cabo Ogono, the N extremity of a reddish-colored promontory, rises nearly perpendicular from the sea, 2 miles NW of Punta Ermicho. Monte Ogono, 304m high, stands 0.5 mile S of the cape. It is the summit of the promontory and is surmounted by a prominent watch tower.

Puerto de Elanchove (43˚24'N., 2˚38'W.), a small and shallow harbor, is situated at the SE side of the promontory of which Cabo Ogono is the N extremity. It is protected by breakwaters which form an entrance, 12m wide, and is used by fishing boats and small craft.

Isla de Izaro (43˚26'N., 2˚41'W.), 43m high, is located 1.8 miles WNW of Cabo Ogono. This island is rounded, shaped like a hillock, and surrounded by reefs. The ruins of a convent stand on its SE end and may be seen amongst the vegetation. The depths NW of this island are irregular and vessels should keep at least 1 mile N of it.

The Ria de Mundaca flows into the sea, 0.5 mile W of Isla de Izaro. The estuary of the river, although of some size, is presently encumbered with numerous sand banks and only infrequently used by small craft and boats.

Puerto de Bermeo (43˚25'N., 2˚43'W.), a small harbor, lies 1.5 miles W of Isla de Izaro. It consists of inner and outer basins and is protected by a breakwater. Tides here rise about 4.5m at springs and 3.5m at neaps. The harbor entrance and basins have depths of 5.5m and are used extensively by fishing vessels. The harbor can be contacted on VHF channel 9 or 16 and pilotage is compulsory for entry. The town stands on low ground behind the harbor. Blocks of flats stand in the N part of the town and are conspicuous from seaward. A directional sector of Rosape Light, shown from a white building with a red roof, leads SW to the harbor entrance.

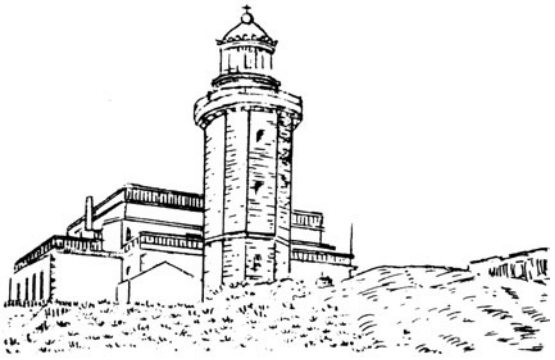
A main light is shown from a prominent tower, with a dwelling, 20m high, standing on the slope of the point. A radiobeacon is situated at the light. An old disused light stands close N of the new light and at a lower elevation. A prominent watch tower stands 0.4 mile S of the new light at a higher elevation. Vessels should use caution not to confuse these towers when close in. Three above-water rocks lie close to the foot of the cape and a reef, on which a heavy sea often runs, extends seaward from it. Vessels are advised not to approach within 1 mile of the cape.

3.26 Cabo Machichaco (43˚27'N., 2˚45'W.), extending NNE from high land, is located 2.3 miles NW of Bermeo. It terminates in a narrow point which is cliffy on the W side and gradually sloping on the E side. This point is not easy to identify, except from the E and W.

Caution.—Gaviota Oil Production Platform (43˚30'N., 2˚ 41'W.) stands 3.5 miles NE of Cabo Machichaco. Submarine pipelines extend SW from the platform to a point on the coast close SE of the cape.

Isla Aqueche (43˚27'N., 2˚46'W.) is located 0.2 mile from the coast, 1 mile WSW of Cabo Machichaco. It is a high, steep, and barren islet. Isla de San Juan Gaztelugache, located 0.4 mile WSW of Isla Aqueche, is rugged and flat-topped. A building standing on the top of this islet is connected to the mainland by a bridge with two spans.

The coast to the W of Cabo Machichaco is cliffy and exposed to the N and NW. During strong winds from these directions, the offshore sea becomes very steep and rough and vessels should give this part of the coast a berth of at least 3 miles.



Cabo Machichaco Light

In the interior, the land is generally mountainous and broken with the high and rugged crests of the Cantabrica Range which are visible during clear weather.

Monte Gorbea, 1,535m high, and Monte Amboto, 1,361m high, both stand about 23 miles SSE of Cabo Machichaco and form excellent marks from offshore. Monte Solluve, a broad peak 683m high, stands 5 miles S of Cabo Machichaco and is easily identified.

Monte Jata, also known as Alto de Plencia, stands 2 miles inland, 5 miles SW of Cabo Machichaco. It rises to a rugged peak, 591m high, and forms a good mark, especially from the N when the summit appears as a cone.

Cabo Villano (43˚26'N., 2˚57'W.), a high and precipitous headland, is located 8.5 miles W of Cabo Machichaco. It projects NW from the coast and is fronted by foul ground. A main light (Gorliz) is shown from a tower, 21m high, standing near the extremity of the cape.

Islote Villano, a low and rugged islet, stands on a rocky shelf, 0.5 mile NE of the cape. It should be given a wide berth of at least 1 mile.

Arminza, a small harbor, lies in the SE corner of a small bay, 1.8 miles E of Cabo Villano. It is protected by a breakwater and used by fishing boats.

The Ria de Plencia flows into the sea, 1 mile SW of Cabo Villano. It is entered between Punta de Ustrikotsek, high and sheer, and Chicharropunti, a low rocky point, 0.5 mile SW. The visible ruins of a castle stand on Punta Ustrikotsek. A bar, which dries, fronts the mouth and a bridge, with nine arches, spans the river 0.5 mile above it. A channel, with depths of 0.2 to 1.8m, leads up to the bridge; the river is frequented by local fishing boats and yachts.

The coast extends SW for 4 miles from the Ria de Plencia to Punta Galea, the E entrance point of Bilbao. Shoal water lies up to 0.5 mile seaward along this stretch of shore and reefs fringe most of the small points.

Puerto de Bilbao (43˚20'N., 3˚01'W.)

World Port Index No. 37400

3.27 The port of Bilbao, lying at the head of Abra de Bilbao, a large bay, is considered to be the principal commercial

port of nothern Spain. The Ria de Bilbao, known in its upper reaches as the Rio Nervion, enters the harbor at its SE extremity and is lined with riverside quays and industrial installations up to 7 miles above its mouth.

Puerto de Bilbao Home Page

http://www.bilbaoport.es

Winds—Weather

Fog may attain a high incidence between May and October, averaging at times up to 11 days per month. Morning fog is more likely during the summer, but winter fog may last for 2 or 3 days.

At Bilbao, the SE winds predominate in winter and the NW winds in summer. Strong NW winds (Galerna), which are more likely to occur in summer, affect the port considerably and Abra de Bilbao may not be safe at such times. Gales occur on the average of 4 days per month between November and March, but become much less frequent in summer.

The climate is quite temperate and temperatures rarely fall below freezing in winter. The summer months are quite warm with average daily highs up to 33˚C in August.

Tides—Currents

Tides rise about 4.6m at springs and 3m at neaps.

At the entrance to the Ria de Bilbao, the ebb tidal currents attain rates up to 3 knots at springs and 1.5 knots at neaps. The flood currents are somewhat weaker. Gales from the NW strengthen the flood currents and may raise the water level by 0.5m; gales from the NE to S generally lower the water level by the same amount.

Depths—Limitations

Abra de Bilbao is entered between the two outer breakwater heads which form an entrance, 500m wide.

The outer harbor of Bilbao is situated at the head of Abra de Bilbao and is entered between two inner breakwaters. Dique de Santurce, the W inner breakwater, extends 0.7 mile NE and Contradique de Algorta, the E inner breakwater, extends 0.5 mile W. They form an entrance 570m wide, but the fairway is narrowed to a width of 370m by Pier No. 1, which extends E into the outer harbor from the inner side of Dique de Santurce.

The entrance to the river lies between two moles at the SE side of the outer harbor. A rocky ledge, which dries, lies on the NE side of the river entrance and is marked by a lighted buoy.

A transporter bridge, with a vertical clearance of 45m, spans the river close within the entrance. A road bridge, with a vertical clearance of 48m, spans the river, 2.7 miles above the transporter bridge.

The fairway in the Ria de Bilbao is dredged to a depth of 6.5m as far as the mouth of the Rio Galindo, 1.8 miles above the entrance; a dredged depth of 6m is then maintained as far as the mouth of the Rio Cadagua, 2.8 miles above the entrance. The remainder of the commercial part of the river and Canal de Deusto, which leads parallel to it, are dredged to depths of 4 to 5m.

The port has facilities for tanker, bulk, ro-ro, general cargo, LPG, container, and fishing vessels. In addition, extensive shipbuilding and repair services are available.

There are depths of 14m in the outer harbor at Santurce; generally, vessels up to 250m in length and 13.7m draft can be handled alongside the quays.

An oil and LPG terminal is situated within Abra de Bilboa at the inner side of the W breakwater. It has six berths, with depths of 10 to 31m alongside, and can handle crude oil tankers up to 500,000 dwt. It was reported (1990) that the largest vessel accommodated alongside at this terminal was 423,600 dwt and 378m in length, with a draft of 26.1m.

Bilbao Berth Information

Name	Length	Depth
Santurce		
Princesa de Espana	500m	14.0m
Adosado	293m	14.0m
Principe de Asturias North	645m	14.0m
Principe de Asturias South	964m	12.0-14.0m
De Enlace	150m	7.0m
Reina Victoria Eugenia	634m	10.5m
Espigon No. 2	100m	7.0m
Espigon No. 1	240m	12.0m
Espigon No. 3N	678m	14.0m
Estacion Maritima	145m	9.0m
Nemar 1	175m	10.5m
Nemar 2	250m	14.5m
Atraque Ro-Ro	170m	6.9m
Ria Nervion		
Zorroza	823m	6.0-7.0m
Helguera	169m	5.5m
Abando	512m	5.0m
Churruca	435m	5.0m
Uribitrte	491m	5.5m
Aduana	162m	4.5m
AHV Sestao	1,200m	5.0m
AHV La Mudela	160m	5.0m
Sefanitro	230m	5.5m
Agruminsa	256m	7.0m
Canal de Deusto		
Margen Derecha	1,505m	8.0m
Margen Izquierda	1,074m	8.0m
Darsena de Udondo-Darsena de Aspe-Ria del Caddagua		
Dow	80m	4.0m

Bilbao Berth Information		
Name	**Length**	**Depth**
Metalquimica	150m	5.0m
Union Espanola de Explosivos	298m	3.5m
Iberdrola	167m	3.0m

Aspect

Abra de Bilbao, the large bay, lies between Punta Galea and Punta Lucero, 3.8 miles WSW.

Punta Galea, 75m high, is a flat-topped promontory with white cliffs. A main light is shown from a tower, with a dwelling, 8m high, standing on the point. A disused light, with a dwelling, 7m high, stands close NNW of the new one. Between Punta Galea and Punta de San Ignacio, 1.5 miles SSE, the E shore of the bay is formed by steep and conspicuous white cliffs.

Punta Galea Light

Punta Lucero, the W entrance point of the bay, is high and barren. It is closely backed by Monte Lucero, 304m high. The W shore of the bay is formed by a steep range of hills extending 2 miles SE from Monte Lucero to Monte Serantes, 450m high. From the NW, the two summits of these hills, in line, appear as a single cone and form a conspicuous mark from offshore. Two aeronautical obstruction lights are shown from the summit of Monte Serantes.

Abra de Bilbao is protected by two breakwaters. The W breakwater extends about 1.5 miles NE from Punta Lucero. The E breakwater extends about 2 miles WNW from Punta Galea; several wave-recorder lighted buoys are generally moored off its outer side. Lights are shown from the breakwater heads; a racon is situated at the light structure on the head of the W breakwater.

The glow of the steel smelting plants, situated along the river banks, is reported to be an excellent mark and visible on clear nights up to 60 miles seaward. Other conspicuous marks include the framework towers, 65m high, of the transporter bridge; two chimneys, 200m and 230m high, standing at the power station on the W side of the bay; and several fuel tanks, floodlit at night, standing NNW of the power station.

Pilotage

Pilotage is compulsory for all vessels. Vessels should send their ETA 72 hours, 48 hours, and 6 hours in advance through their agent. Vessels should contact Bilbao Traffic 1 hour prior to arrival on VHF channel 12 and then maintain a listening watch on VHF channel 6.

Vessels contact the pilot station again when within 7 miles of the port entrance.

Pilots board 2 miles off the breakwater. In stormy weather, vessels may be instructed to follow the pilot launch within the breakwaters where pilots can board in calmer waters. Harbor pilots board within 0.5 mile of the inner breakwaters.

Anchorage

Large vessels may anchor outside of Abra de Bilbao, in depths of 40 to 50m, sand, N of the W outer breakwater. Anchor berths, with depths up to 27m, lie within Abra de Bilbao and are allocated by the pilot station. Generally, vessels anchor in the SW part of this bay where the bottom is sand with fair holding ground.

Caution

A disused submarine cable lies in the entrance to Abra de Bilbao and may best be seen on the chart.

A restricted area, the limits of which are shown on the chart, extends NW from the coast in the vicinity of the Punta Galea. Due to the existence of submarine cables, anchoring and trawling are prohibited within this area.

Hydrographic buoys may be frequently moored up to 15 miles N of the port entrance.

Bilbao to Santander

3.28 Ensenada de San Julian de Musques (43˚21'N., 3˚07'W.) is entered between Punta Lucero and Punta de Musques, 1 mile SW. The sands at the head of this bay contrast sharply with the cliffs on either side and form a conspicuous mark from offshore. The Ria de Somorrostro, fronted by a bar, flows into the SW corner of the bay. It has depths of 2.1 to 2.5m at HWS and is used by light draft barges.

Monte Camposquerra, 395m high, stands 3.8 miles WSW of Punta Lucero. It is an excellent landmark from seaward; when viewed from the N, the peak appears conical with an outcrop on its W side.

Tides—Currents.—During the winter, the coastal current in this vicinity generally runs E and NE due to the prevailing W winds. It runs with greater strength offshore and in NW gales may attain rates up to 3 knots.

3.29 Puerto de Castro Urdiales (43˚23'N., 3˚13'W.) (World Port Index No. 37410), a small port, lies on the S side of Punta de la Atalya, 4.5 miles WNW of Ensenada de San Julian de Musques.

Castillo de Castro Urdiales, a conspicuous castle, stands on a rocky hill just within Punta de Santa Ana, a spur projecting close S of Punta de la Atalaya. A main light is shown from a tower, 16m high, surmounting the SE corner of the castle.

The harbor is protected by two breakwaters and has depths up to 11m. A berth at the inner side of the S breakwater is

Punta Lucero Breakwater (Bilbao) from W

Punta Lucero Breakwater (Bilbao) from SSW

Punta Lucera Breakwater (Bilbao) from SE

Bilbao—Outer Harbor and Abra de Bilbao from NW

Bilbao from SE

Bilbao—Outer Harbor

152m long and has depths up to 7m alongside. It is used by small coasters, fishing vessels, and pleasure craft up to 105m in length and 5m draft. Coasters up to 3,000 dwt and 6m draft may anchor within the harbor.

The port can be contacted by VHF. Pilotage is compulsory.

3.30 Punta del Rabanal (43˚24'N., 3˚13'W.), low and rocky, is located 0.8 mile NW of Punta de la Atalya. A large cemetery is situated on the E slope of this point and is conspicuous from offshore. During bad weather, vessels should give this point a good berth as the inshore depths are irregular and form a steep and dangerous sea.

Bajo Castro Verde (43˚33'N., 3˚13'W.), with a least depth of 53m, lies about 9 miles N of Punta del Rabanal. During bad weather, heavy seas are experienced over this bank and breakers form in S gales. Vessels are advised to pass well clear of it.

Monte Cerredo, 645m high, stands 2.5 miles W of Punta de Rabanal. It is the highest peak in this vicinity and forms an excellent mark from seaward because of its rugged character.

Bilbao—Canal de Deusto from S

Caution.—A measured distance of 2,214m, marked by two pairs of beacons, is situated off the coast 3 miles WNW of Punta del Rabanal.

3.31 Cabo Cebollero (43˚25'N., 3˚19'W.), also known as Punta Sonabia, is located 4.7 miles WNW of Punta de Rabanal. It is formed by a spit, 23m high, connected to the mainland by a narrow neck which partially covers at HW. From a distance the spit appears as a detached island.

Ensenada de Orinon, a small sheltered bay, is entered close E of Cabo Cebollero. Small vessels, with local knowledge, can anchor in this bay under the lee of the W shore. The head of the bay shoals rapidly and caution is advised.

Monte Candina, which has several peaks, stands 1.3 miles SW of Cabo Cebollero. It rises to a height 485m and is conspicuous from seaward as several white patches, lying in the middle of dark wooded land, are situated on the N face.

Canto de Laredo, 52m high, is located 4 miles W of Cabo Cebollero. The coast between is steep and rocky with numerous submerged dangers fronting the shore. This promontory stands at the E end of Playa de Laredo, a long curved beach, and forms a demarcation mark between the high and low land.

Laredo (43˚25'N., 3˚25'W.), a small drying harbor, lies on the W side of the promontory. It is protected by breakwaters and used by fishing boats and small craft. Numerous prominent hotels and buildings at a tourist resort line the beach to the NW of the harbor.

3.32 Monte de Santona (43˚27'N., 3˚26'W.), a mountainous peninsula, is located 6 miles WNW of Cabo Cebollero. It is connected to the mainland at the W side by a narrow sandy isthmus known as Playa de Berria. From offshore, the peninsula appears as an island with two summits. Atalaya de Santona, a conspicuous watch tower, stands on the N summit. Monte Ganzo, 373m high, is the S and highest summit and can easily be identified from the NE or E.

Vessels approaching from the N have mistaken Monte Candina, previously described in paragraph 3.31, for Monte de Santona; caution is recommended.

Punta del Pescador, located 3 miles NNW of Canto de Loredo, is the NE extremity of Monte de Santona. A main light is shown from a prominent tower, 13m high, standing on the point.

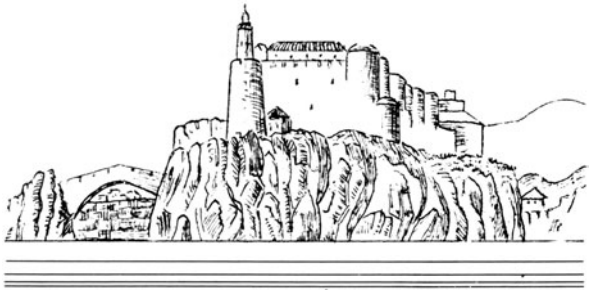
Punta del Caballo, the E extremity of Monte de Santona, is located 1 mile SSE of Punta del Pescador. It is backed by high cliffs on which stand the ruins of an old battery.

Punta del Fraile, located 0.5 mile S of Punta del Caballo, is the SE extremity of Monte de Santona. It terminates in a prominent vertical rock, 40m high, partly detached from the coast. La Merana, a drying rock, lies close NE of the point and is usually marked by breakers.

Puerto de Santona (43˚26'N., 3˚28'W.), a small harbor, lies on the SW extremity of Monte de Santona and is mostly used by small coasters and fishing vessels.

Tides rise about 4m at springs and 3m at neaps. The ebb tidal current is always much stronger than the flood current and usually attains a rate of 3 knots. During heavy rains, the ebb current may run at a much higher rate and caution is advised.

West side of Bilbao from E



Castro de Castro Urdiales Light

The Ria de Santona leading to the harbor is entered between Punta de San Carlos, the S extremity of Monte de Santona, and El Puntal, a low tongue of sand dunes, located 0.3 mile S. Banco del Pitorro, with depths of 0.7 to 1.9m, lies across the entrance. A channel, with a dredged depth of 4m, leads over the bar and is indicated by a lighted range.

Caution.—Breakers have been reported (1994) at certain states of the tide and in certain weather conditions, indicating shoaling. Extreme caution should be exercised when crossing the bar.

3.33 Monte Ano, 185m high, stands 1.8 miles WSW of Santona and forms a nearly perfect cone when viewed through the entrance from E. It is an excellent mark when proceeding over the bar. A prominent fort stands on Punta de San Carlos.

The harbor consists of two basins and an L-shaped pier. A quay within the S basin is 146m long and has depths of 3 to 4m alongside. The channel to Colindres, 2.5 miles S of Santona, has depths of less than 1m and is only used by small craft. The harbor can be contacted by VHF. Pilotage is compulsory for vessels over 50 grt. Local knowledge is required as the fairway within the entrance is unmarked and the depths over the bar frequently change.

Vessels which have proceeded over the bar can anchor, in depths of 9 to 12m, sand and good holding ground, in a comparatively deep area lying S of the town; local knowledge is required. Larger vessels can anchor outside the bar, in a depth of 12m, sand, about 0.3 mile offshore SSE of Punta del Fraile. This roadstead is known as Fondeadero del Fraile and is well-sheltered from NW through SW, but is open and dangerous with NE winds.

3.34 Punta del Aguila (43˚28'N., 3˚27'W.), located 0.5 mile WNW of Punta del Pescador, falls to the sea in vertical cliffs and rises close inland to La Corona, a peak about 200m

high. The village of Dueso and the buildings of a prison stand on the NW slope of Monte de Santona, 0.7 mile SW of Punta del Aguila, and are conspicuous from seaward.

Punta del Brusco is located 1.2 miles W of Punta del Aguila. Playa de Berria, a low and sandy isthmus extends between these two points; several prominent buildings stand on it. Monte del Brusco, 191m high, stands 0.5 mile SW of Punta del Brusco. Los Hermanos, a group of three rocks awash, lie 0.7 mile NNW of Punta del Brusco at the outer edge of the dangers fringing the shore.

Ensenada de Noja is entered between Punta del Brusco and Punta de la Mesa, 2 miles NW. The shores of this bay are low, rugged, and fronted by numerous rocks and shoals which break in bad weather. Vessels without extensive local knowledge are advised to avoid approaching this bay, even during good weather. El Doble, with a least depth of 13m, lies about 2.3 miles NNE of Punta del Brusco. This detached shoal is dangerous in heavy seas and generally breaks in NW gales. Vessels should pass well N of this shoal during bad weather.

Punta Garfanta (43˚30'N., 3˚31'W.), located 0.4 mile NW of Punta de la Mesa, is fairly steep and fringed by a reef. Rocks and foul ground lie up to about 0.5 mile seaward of this point. A conspicuous church stands in the village of Noja, close SW of the point, and can be identified from up to 4 miles offshore.

Cabo Quejo (43˚30'N., 3˚33'W.), 80m high, is located 1.5 miles NW of Punta Garfanta. It is steep, rocky, and reddish in color. A prominent framework television mast, 70m high, stands near the summit of Monte Casilla, 0.4 mile S of this cape.

Cabo Ajo (43˚31'N., 3˚35'W.) is located 2 miles W of Cabo Quejo and is bordered by steep cliffs along its N side which appear from E or W as steps. A main light is shown from a tower with an aluminum cupola, 8m high, standing on the cape.

Cabo Quintres is located 2.5 miles SW of Cabo Ajo. The coast between is rugged and bold. This cape rises close within to a height of 133m; the ruins of a watch building stand on its summit. Its N and NW sides are very steep and from the W and NE appear vertical. A rocky patch, with a depth of 20m, lies 0.8 mile NW of the cape.

Punta Concabrea is located 1.8 miles SW of Cabo Quintres. The coast between is formed of low cliffs but rises to Monte Galizano, 216m high, standing 2 miles SE of the point. Punta Concabrera is steep and bordered by sunken rocks. Cabezo de Galizano, a reef, extends 1.3 miles NW of this point. It has depths of 11 to 18m and breaks in bad weather.

Cabo Galizano, located 2.5 miles SW of Cabo Quintres, is formed by cliffs and may be identified by a sharp-pointed peak standing close SW of it. Ensenada de Galizano, a small bay, lies close E of this cape. It has depths of 5 to 6m and provides shelter to fishing vessels in strong SW and W winds.

Isla de Santa Marina (43˚28'N., 3˚44'W.), low and covered with undergrowth, lies close off the coast, 1.5 miles W of Cabo Galizano; it is marked by a beacon. The E and S shores are fringed by rocky ledges. A narrow passage lying between the E side of the island and the mainland leads into the Ria de Santander, but can only be used by small boats with local knowledge.

Puerto de Santander (43˚27'N., 3˚49'W.)

World Port Index No. 37470

3.35 Santander is considered to be one of the best commercial ports on the N coast of Spain. The city and harbor facilities are situated on the N side of the mouth of the Ria de Santander. The port is also a shipbuilding and fishing center..

Puerto de Santander Home Page

http://www.puertosantander.es

Winds—Weather

Weather conditions at Santander are similar to those at Bilbao, except that there is less fog on the average and temperatures are somewhat cooler in summer.

Tides—Currents

Tides rise about 5.4m at springs and 3m at neaps. Gales from the NW may raise the water level by up to 0.5m and those from SE may lower it about the same amount.

The tidal currents are generally strong. The ebb current may attain rates up to 3 knots at springs off the harbor facilities and up to 5 knots in the river entrance.

Depths—Limitations

Bajo Santonuca, a rocky bank, lies in the approaches with its shallowest part about 0.7 mile NNW of Isla de Santa Marina. It has a least depth of 16.7m and breaks in heavy weather. Vessels should pass W or SE of this bank.

Isla de Mouro divides the approach to the river into Eastern Channel and Bar Channel.

Eastern Channel, the main approach, leads between Isla de Mouro and Isla de Santa Marina, and has depths of 15 to 18m over most of its width.

Bar Channel, generally used by small vessels with local knowledge, leads W of Isla de Mouro and has a least depth of 7m. Bajo La Garma, with a depth of 5m, lies in the S part of this channel and must be avoided. This rock usually breaks in bad weather. In strong N winds, seas may break across the entire width of the channel.

Canal de El Carrejo leads from the intersection of the approach channels into the river. This channel is constricted between Islote Horadada and Punta Rabiosa, 0.4 mile SSW, by a sand bank at the S side and a reef at the N side. The fairway within the river is dredged to depths of 9 to 11.5m.

There are no restrictions for the length or beam of vessels entering the port. Vessels up to 210,000 dwt and 10.5m draft have been accommodated. It was reported (1993) that vessels up to 12.5m draft could be handled at HW.

The port has riverside quays and tidal basins which provide services for container, general cargo, tanker, ro-ro, passenger, ferry, cruise, and bulk vessels. There are also extensive facilities for fishing vessels and yachts.

Several dry docks are situated in the port. The largest is at Astillero, 2.5 miles S of the main commercial port. It is 231m

long, 32m wide, and has a depth over the sill of 11.5m at HW. A modern installation for dismantling and scrapping vessels operates upriver, on the way to Astillero.

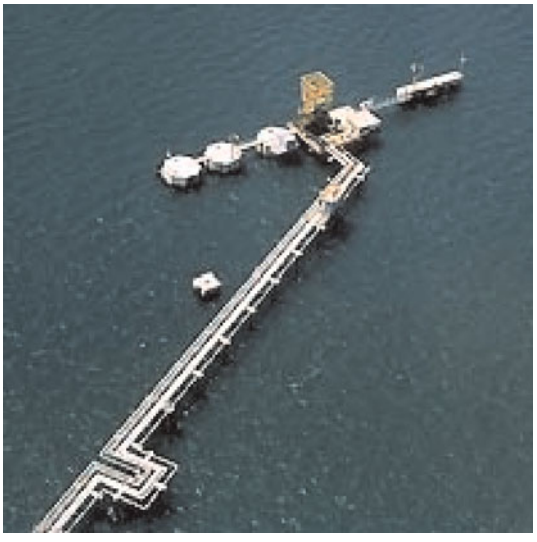
Santander Berth Information		
Name	**Length**	**Depth**
Albareda-Almirante Quay	385m	7.2-9.5m
Caleron Quay	198m	3.9m
Quays Nos. 10 and 11	242m	10.5m
Stretch Maliano Quay	710m	8.0m
Margen Norte Quay	538m	9.5m
Nueva Montana Quijano Quay	218m	5.0m
Rafael Martinez Quay	300m	13.0m
Gabriel Huidobro Quay	208m	13.0m
Jesus Gonzalez Quay	170m	10.0m
Quay No. 3	570m	13.0m
Quay No. 4	270m	13.0m
Terquisa Quay	200m	6.0m
REPSOL Offshore Oil Berth	244m	6.0m

Aspect

The estuary of the Ria de Santander lies between Isla de Santa Marina, previously described in paragraph 3.34, and Cabo Mayor, 2.5 miles WNW. The entrance to the river is encumbered with sand banks and spits through which several channels intersect.

Santander—Margen Norte Quay (Maliano 1-7)

Cabo Mayor (43˚30'N., 3˚47'W.) is steep; its N side is formed by large slate slabs. A main light is shown from a conspicuous tower, with a dwelling, 30m high, standing close WSW of the cape. A radiobeacon is situated at the light. A former signal station and some radio masts standing 0.5 mile W of the light are also easy to identify. Paseo del Alta, a ridge, is situated 0.5 mile S of the cape and extends E and W for about 1 mile. Several buildings stand on this ridge and are conspicuous from seaward.



Santander—REPSOL Liquid Bulk Wharf

Santander—Raos 4 (Felix Ducasse)

Isla Mouro, a steep and rocky island, is located 1.7 miles SE of Cabo Mayor. A light is shown from a conspicuous tower, with a dwelling, 18m high, standing on it. La Corbera, a steep and flat-topped islet, lies on a reef close NE of the NE

Santander—Raos 4 (S of Darsena de Maliano)

extremity of the island. Bajo El Calo, with depths of less than 4m, extends up to about 300m W of the W side of the island.

Punta del Puerto, located 0.5 mile SW of Isla de Mouro, is the SE extremity of the Peninsula de la Magdalena. A light (La Cerda) is shown from a tower with a dwelling, 9m high, standing on the point. Palacio Real, the former royal palace, stands on the heights of the peninsula and is very conspicuous.

Cabo Menor, terminating in a low flat point, is located 0.5 mile SE of Cabo Mayor. Ensenada de Sardinero, a large sandy bay, lies between this cape and the Peninsular de la Magdalena. It is a resort area and is lined with numerous prominent buildings and hotels.

Islote Horadada, located 0.3 mile SW of Punta del Puerto, is a small broken islet. A light is shown from a prominent tower, 5m high, standing on it.

Ranges and leading lines indicating the approaches to the port may best be seen on the chart. The entrance channel is indicated by a lighted range and the fairway within the river is marked by lighted buoys.

An airport is situated on reclaimed land in the S part of the port and is prominent.

Pilotage

Pilotage is compulsory for vessels over 250 tons. Vessels should send an ETA at least 24 hours and 12 hours in advance. Pilots can be contacted on VHF channel 12 and will generally board about 0.8 mile ENE of Isla de Mouro. During bad weather, pilots will board in the vicinity of Isla Horadada, about 0.8 mile SW of Isla de Mouro.

Anchorage

Ensenada del Sardinero, lying SE of Cabo Menor, is open to the NE and provides an excellent roadstead during good weather for vessels waiting to enter the port. Large vessels can anchor, in depths of 17 to 20m, sand, about 0.4 mile SE of Cabo Menor with Cabo Mayor in line with this cape. The S part of this bay is rocky and should be avoided.

Temporary anchorage can be obtained in Fondeadero del Puerto, in depths of 11 to 14m, sand and gravel, about 0.3 mile S of the light on La Cerda.

Fondeadero de Promontorio also provides good anchorage for medium-sized vessels. This anchorage lies in depths of 6 to 8m, sand and mud, about 300m offshore, 0.4 mile WSW of Islote Horadada.

Caution

Depths and banks in the entrance channel are liable to change because of silting. The port authorities should be contacted for the latest information.

Local ferry vessels cross the fairway within the harbor.

Santander to Gijon

3.36 **Cabo de Lata** (43˚30'N., 3˚49'W.), formed by low cliffs, is located 1.2 miles WNW of Cabo Mayor and bordered by rocks and a reef. It is the N point of land between the Ria de Santander and Cabo Lastres, 65 miles W. Islote Ansion, along with other drying rocks, lies close off the NW side of this cape.

The coast from Cabo de Lata trends irregularly WSW and is closely bordered by several islets and rocks. Islote Virgen del Mar, connected to the mainland by a bridge, lies 3 miles WSW of Cabo de Lata and has a hermitage standing on it.

Punta de Somocueva (43˚28'N., 3˚57'W.), located 6 miles WSW of Cabo de Lata, is low and rugged. Its seaward extremity is formed by a small peninsula which is connected to the shore by a narrow isthmus. Two large rocks lie close off the point, but are not easily seen from offshore. A small cove lies on the W side of the isthmus.

Alturas de Liencres, a prominent group of dark hills, rises along this part of the coast. It includes Monte Picota, 235m high and double peaked, standing 1.8 miles S of Punta de Somocueva and Pico de Mogro, 167m high and isolated, standing 1.7 miles SW of the same point. This group forms an excellent mark for identifying the coast when approaching Santander from the W, as the hills are the only high land near the coast between the Ria de Suances and Santander.

Caution.—Bajo Cabezo de Tierra, with a least depth of 17m, and Bajo Cabezo de la Virgen del Mar, with a least depth of 18m, lie about 2 miles NW and 2.3 miles WNW, respectively, of Cabo de Lata. Bajo La Lengueta, with a least depth of 25m, and El Balamo, with a least depth of 19m, lie about 1 mile NW and 0.5 mile NNW, respectively, of Bajo Cabezo de Tierra. All of these banks break in bad weather and, during such periods, vessels are advised to pass at least 4 miles NNW of Cabo de Lata.

Cabezos de la Vaca, with a least depth of 11m, lies about 0.5 mile WNW of Cabo de Lata and extends up to 1 mile offshore. It breaks in most bad weather and usually in any heavy swell.

3.37 The **Ria de Suances** (43˚27'N., 4˚02'W.) is located 4 miles WSW of Punta de Somocueva. The estuary lies between Punta del Cuerno and Punta del Dichoso, a small peninsula, 1 mile WSW. An entrance channel leads W of Punta de Afuera,

located 0.7 mile SW of Punta del Cuerno, and is from 50 to 100m wide with a least depth of 1m. Tides here rise 3.9m at springs and 3m at neaps. Small coasters can proceed up the river at HW to Requejada and Hinojedo, 3.5 miles above the entrance.

Bajo del Castro, with a least depth of 39m, and Bajo Juan de Ambojo, with a least depth of 34m, lie about 3.5 miles NNE and 2.8 miles N, respectively, of Punta de Somocueva. Although these banks have not been observed to break, the sea over them, in bad weather, becomes high and steep and vessels are advised to pass well to the N during such conditions.

A main light (Torco de Afuera) is shown from a prominent tower with a dwelling, 9m high, standing on the E extremity of Punta del Dichoso. Punta del Cuerno can be identified by the Islas de Suances, five islands which lie close off it. The estuary is open to the N and strong winds from this direction cause a heavy sea. The peninsula, of which Punta del Dichoso is the N extremity, protects the estuary from W and NW winds. It appears from a distance as an island because the isthmus joining the mainland is very low. The entrance channel is indicated by a lighted range and leads between training walls which are marked by beacons and cover at HWS. Local knowledge is required. Pilotage is compulsory, except for small craft, and is reported to be available.

3.38 Punta Ballota (43˚26'N., 4˚05'W.), located 1.5 miles WSW of Punta del Dichoso, is a prominent steep black point. La Percebera, a steep-to drying rock, lies close N of this point. Ensenada de Cabrera is entered close E of the point. Anchorage can be obtained, in depths of 10 to 14m, sand, within this bay under the lee of Punta Ballota. The berth is sheltered from NW and SW gales, but the shores of the bay are foul.

Bajo Canto, with depths of 26 to 37m, lies 2 miles NNE of Punta Ballota. This bank may break in NW gales and vessels should give it a wide berth in bad weather.

The coast SW of Punta Ballota is moderately high and generally bare. Monte Huervo, 270m high, stands 2.3 miles SSW of Punta Ballota and is fairly conspicuous from offshore.

Punta Calderon, located 3 miles SW of Punta Ballota, is a high promontory fronted by several islets. Ensenada de Calderon, which provides good shelter for small craft, lies 0.7 mile E of the point and has depths of 5 to 16m, sand and rock.

Ensenada de Luana, lying 3 miles W of Punta Calderon, can be identified by the town of Trasierra which stands on the high land close SW of the entrance. This bay provides shelter to fishing boats in NW and SW winds.

Puerto de Comillas (43˚23'N., 4˚17'W.), a small dying harbor, is situated 2.8 miles W of Ensenada de Calderon. It is entered close E of Punta de la Gerra, a small reef-strewn point. The harbor is formed by two moles and has an entrance, 10m wide. It is used by fishing boats and pleasure craft with local knowledge. The approach channel is indicated by a lighted range, but is narrow and has reefs on either side. The harbor can be identified by a red seminary building with two red towers standing on the heights SW of the entrance and by the chimneys of a smelting works situated 0.7 mile E of the town.

Bajo Torriente, with a least depth of 22m, and Bajo Luana, with a least depth of 26m, lie about 5 miles NE and 3.8 miles NNE, respectively, of Puerto de Comillas. Both of these banks break heavily in strong NW winds and should be given a wide berth in bad weather.

Ensenada de la Rabia is located 2 miles W of Puerto de Comillas. Although the shores of this bay consist of sandy beaches, numerous rocks encumber the approaches and only small craft with local knowledge should attempt to seek shelter here.

3.39 Cabo Oriambre (43˚24'N., 4˚20'W.), located 2 miles WNW of Puerto de Comillas, is bordered on its N side by whitish cliffs which rise to a hill, 90m high. Monte Oriambre, 100m high, stands 1 mile S of the cape and is conspicuous. La Molar, a rocky patch, lies about 0.5 mile NE of the cape. It has a least depth of 6.4m and often breaks in any swell. Vessels are advised to pass at least 2 miles seaward of Cabo Oriambre and to give it a wider berth in bad weather.

The **Ria de San Vicente de la Barquera** (43˚23'N., 4˚23'W.) is entered 2 miles WSW of Cabo Oriambre. The shore between is fringed by an extensive white beach. The estuary is fronted by a bar, with a depth of 1.8m, and entered through a channel with depths of 1 to 2m. The approach can be identified by Monte Boria, 158m high, standing on the W side of the river mouth and by Punta de la Silla, on which stands the prominent light of San Vicente. Bajo de Pedro Gil, with a least depth of 0.7m, lies close offshore, 0.7 mile NW of the light. When the sea breaks on this shoal, it is usually also breaking over the bar at the entrance.

Pico Jurgon, 398m high, stands 3.5 miles S of the light and is also a good mark from offshore. The entrance channel changes constantly and leads between extensive tidal flats. The river mouth is protected by a breakwater which has been constructed over the rocky islets of Pena Mayor and Pena Menor, both lying close off the entrance. A training wall, extending on the S side of the channel, contains the sand banks. Bajo la Plancha, a rocky patch with a least depth of 1.3m, lies close N of the breakwater head and must be avoided by vessels approaching from NW.

The town, a small resort, stands at the SW end of the harbor on a rocky peninsula which separates the two arms of the estuary. Two bridges with numerous arches connect the town to the shores of the estuary. The harbor is mostly used by fishing vessels and pleasure craft with local knowledge. Small coasters up to 4m draft are reported to enter the estuary at HWS.

Punta de Pechon (43˚24'N., 4˚29'W.), a steep point, is located 4.2 miles W of the Ria de San Vicente de la Barquera. A prominent framework television mast, 60m high, stands 0.7 mile SSW of the point.

The Ria de Tina Menor and the Ria de Tina Mayor are located 1 mile E and 1 mile W, respectively, of Punta de Pechon. Both of these estuaries have steep cliffy sides and appear as sharp breaks in the coastal plateau. Both of the rivers can be navigated by small craft, but the depths in the entrances are shallow and subject to change. Local knowledge is recommended.

Punta de San Emeterio (43˚24'N., 4˚32'W.), located 1 mile W of the entrance to the Ria de Tina Mayor, is cliffy and backed by high land. It lies close E of a large coastal ravine which extends back to the town of Pimiango, 1 mile S. A light is shown from a tower, with a dwelling, 9m high, standing on the point.

The Ria de Santiuste flows into the sea 2 miles WSW of Punta de San Emeterio. This river is conspicuous because of the break in the coast formed by its estuary which is known as Ensenada de Mendia. The river mouth and most of the estuary are filled with sandbanks and foul ground and can only be approached by small craft with local knowledge. Islote Castron de Santiuste, rocky and steep, lies at the W side of Ensenada de Mendia. This islet is prominent and a conspicuous white beach on the mainland shore is visible to the S of it.

Monte Jana, 610m high, rises to a conspicuous peak 4 miles SSW of Punta de San Emeterio.

Picos de Europa, a range of mountains up to 2,642m high, stands about 20 miles SW of Punta de San Emeterio. It forms an excellent landmark in clear weather, as the highest peaks are snow-capped throughout the greater part of the year. Depending on atmospheric conditions, these peaks may be visible from as far E as Santander or as far W as Cabo Penas.

3.40 Puerto de Llanes (43˚25'N., 4˚45'W.), a small harbor, is entered at the mouth of the Rio Carrocedo, 9.5 miles W of Punta de San Emeterio. It is shallow and only used by fishing vessels with drafts up to 1.8m. The entrance channel is narrow and intricate and local knowledge is required.

Punta de San Anton is located on the E side of the river entrance. A main light is shown from a tower with a dwelling, 8m high, standing on this point. A radiobeacon is situated at the light and prominent framework radio masts stand close E and W of it.

Torre de Cerredo, the highest of Picos de Europa, rises 13 miles S of Llanes and, as previously noted, is snow-capped throughout the greater part of the year. Monte Turbina, 1,315m high, stands 4 miles S of Llanes. It has a remarkable conical peak and, in line with Torre de Cerredo, leads to the coast near the entrance to Puerto de Llanes.

The coast W of Llanes becomes much indented and is fronted by numerous rocks and islets which lie up to 0.5 mile offshore. Foul ground lies between these islets and the shore and vessels are advised to give the area between Llanes and Cabo Prieto a wide berth.

Cabo Prieto (43˚27'N., 4˚50'W.) is located 4 miles WNW of Llanes. It slopes gradually to the sea and terminates in low vertical cliffs. Monte Castillo, 106m high, lies SW of the cape; a television antenna and a conspicuous building stand on the summit. Baja La Vaca, two rocks awash, lie about 0.2 mile ENE of the cape and break in nearly any swell. Islote Peyes, a small islet, lies 0.2 mile E of the cape with foul ground between. Numerous other rocks and foul ground areas front this islet and the mainland shore to the SE.

The Rio Bedon enters the sea 1.5 miles W of Cabo Prieto. A conspicuous white sand and shingle beach, visible for a considerable distance offshore, lies on the E side of the river mouth.

Several small coves are located E and W of the Rio Bedon and can be used by fishing vessels with local knowledge when seeking shelter.

Cabo de Mar (43˚28'N., 4˚55'W.), located 4 miles WNW of Cabo Prieto, is a low headland which terminates abruptly in a vertical cliff. It can be easily identified when closer inshore, but blends with the coastal cliffs when seen from farther seaward. Ermita San Antonio del Mar, a chapel, stands on Cabo de Mar and can usually be sighted at a greater distance than the cape itself.

In bad weather, a heavy sea may develop off Cabo de Mar; vessels are advised to pass at a safe distance.

The coast extending W of Cabo de Mar is formed by low cliffs and indented with numerous small coves. The Rio Aguamia, with a sandy mouth, enters the sea 2.3 miles W of the cape, and can be identified from offshore by the prominent ravine through which it flows.

3.41 Puerto de Ribadesella (43˚28'N., 5˚04'W.) (World Port Index No. 37530), a small harbor, lies at the mouth of the Rio Sella, 6.2 miles W of Cabo de Mar. It is used by small coasters, fishing vessels, and yachts. The river is entered between Punta del Caballo, the W extremity of a small peninsula, and Punta de Somos, 0.4 mile WNW. Monte Corbero, 99m high and dark in color, stands in the middle of the narrow peninsula. A small television relay station is situated on its summit. A conspicuous white chapel stands on Punta del Caballo.

Monte Somos backs Punta de Somos and terminates in a steep slope. A main light is shown from a tower, with a dwelling, 8m high, standing on the NW part of this mountain, 0.4 mile WNW of the point.

The bar which fronts the river has a depth of 2m, but is liable to shift and silt. In good weather, small coasters up to 67m in length and 3.5m draft can enter the river at HW. Local knowledge is required. Drying quays are situated along the riverside close above the entrance. The bottom is soft mud and sand and vessels can lie safely aground at LW. Small vessels can also anchor, in depths of 4 to 6m, in the channel, just within the bar; however, caution is necessary as the currents are strong when the river is in flood.

Bajo Serropio, with a least depth of 11m, extends up to 1 mile NNE of Punta del Caballo and breaks in bad weather. The bottom is uneven in the vicinity of this rocky shoal and, even in good weather, a heavy swell may build up on it. A wreck, with a depth of 13m, is reported to lie about 1.5 miles NE of the river entrance.

Monte Mofrecho, 897m high, stands 4 miles SSE of the entrance to Ribadesella and forms a good mark from NE. Pico Pienzo, 1,159m high, stands 8 miles WSW of Ribadesella. Its summit consists of a series of conical peaks and forms an excellent mark from seaward. From N and NE, this mountain may be more easily identified than most of the other peaks in this vicinity, as it is dark in color and has such a distinctive form.

Punta de la Sierra (43˚29'N., 5˚08'W.) is located 2.3 miles W of Ribadesella. It is formed by steep cliffs, on its N side, and rises close inland to a gentle hill known as Los Carreros.

Bajo Los Carreros, which partly dries, extends up to 0.5 mile N of the point. This rocky reef has depths of 1 to 4.8m and the sea breaks on it in the slightest swell. Vessels are advised to give this point a berth of at least 2.5 miles.

The coast trends W and NW for 7 miles from Punta de la Sierra to Ensenada de Lastres, and forms a long bight with numerous rocks fronting the shore.

Ensenada de Lastres (43˚31'N., 5˚16'W.) is entered between Punta del Penote and Punta Misiera, a high point, 1.2 miles NNW. A hermitage and a television tower, 60m high,

stand on the top of Punta Misiera. A small harbor, formed by an L-shaped breakwater, lies at the foot of Punta Misiera. It has depths of 4 to 7m and is mostly used by local fishing vessels.

Vessels may obtain anchorage, in depths of 11 to 13m, muddy sand and good holding ground, 0.5 mile SE of the breakwater head. This roadstead is mostly used by vessels sheltering from NW winds.

Bajo de la Plancha, with a least depth of 5.7m, lies 0.3 mile NE of Punta Misiera. A shallow detached pinnacle rock lies midway between the point and this rocky shoal. The sea breaks on the shoal in bad weather and vessels should give it a wide berth.

Cabo Lastres (43˚32'N., 5˚18'W.), 112m high, is located 1.8 miles NW of Ensenada de Lastres and has steep, reddish cliffs on its N side. El Vaquin, a group of sunken rocks, extends about 200m N from the cape; the sea breaks up to more than 1 mile seaward of them during NW gales. A main light is shown from a tower standing on the cape.

To the W of Cabo Lastres, the coast is high and slopes steeply to the sea. The shores are fringed by reefs and numerous rocks lie up to 0.2 miles seaward.

3.42 The **Ria de Villaviciosa** (43˚32'N., 5˚23'W.) flows into the sea 3.5 miles W of Cabo Lastres. The estuary is entered between Punta Rodiles and Punta de la Mesnada, 0.5 mile W. It can be easily identified by Monte Rodiles, 124m high, rising close S of Punta Rodiles and a large yellowish scar on the high cliffs of Punta de la Mesnada. The head of the estuary is low and sandy with trees lining the beach. Shallow rocks extend up to 0.2 mile from the entrance points.

The entrance channel is entered close SSE of Punta de la Mesnada and the bar has depths of 1 to 1.5m at LWS and 4.4 to 5m at HWS. Entry should not be attempted without local knowledge and never during bad weather. A quay, 125m long, is situated near the head of the estuary, 2 miles upstream, and can be used by fishing vessels and small coasters with drafts up to 3m.

Caution.—Submarine cables extend N from the vicinity of the river entrance.

Ensenada de Tazones (43˚33'N., 5˚24'W.) is located at the W side of the entrance to the Ria de Villaviciosa. It is entered between Punta de la Mesnada and Punta de Tazores, 0.7 mile NNW. This small bay has a rocky shore and is backed by high land which slopes steeply to the sea. Tazones, a village, stands at the head of the bay, and a mole, which extends SE from the shore, forms a basin with depths of 3m. It is used by fishing boats and small craft.

3.43 Punta de Tazones (43˚33'N., 5˚24'W.), 128m high, is formed by steep cliffs falling to the sea and bordered by rocks. A main light is shown from a prominent tower, with a dwelling, 11m high, standing on the point.

Vessels can obtain anchorage, in depths of 10 to 12m, sand, 0.3 mile ESE of the light. The berth is sheltered from W winds and the holding ground is good, but vessels should leave with any sign of increasing winds from the N or E.

Punta del Olivo (43˚33'N., 5˚25'W.), 103m high, is located 0.7 mile WNW of Punta de Tazones Light. It slopes gradually to the sea from the higher land within and is difficult to identify from seaward. The point is bordered by a reef and rocks lie up to 0.3 mile offshore.

Punta Pena Rubia, located 4.5 miles W of Punta del Olivo, terminates in cliffs and is bordered by drying rocks. Several villas and groves are situated on its round summit, which is 140m high.

Monte Curiella, 534m high, and Monte Penas Blancas, 348m high, rise 6 miles SW and 7 miles WSW, respectively, of Punta del Olivo. Both these mountains have prominent peaks and are good marks from seaward.

Cabo de San Lorenzo (43˚34'N., 5˚37'W.) is located 9 miles W of Punta del Olivo. The coast between consists of generally low rocky shores, which are cliffy in places, backed by a level plateau, 120m high. The cape rises close inland and terminates in a small dark knob which is conspicuous from the E and W. A prominent white chapel is situated on the summit of the cape and two beacons, marking a measured distance, stand close N of it.

Islote de San Lorenzo, connected to the mainland by a reef, is located close N of the cape. Piedras de Estano, three small above-water rocks, lie 0.4 mile ESE of this islet. Restinga de San Lorenzo, a rocky patch, lies 0.6 mile W of the islet. It has a least depth of 5m and breaks in bad weather.

Punta del Cervigon, located 1 mile WSW of Cabo de San Lorenzo, is low and flat. Several houses stand on this point and reefs border the shore between it and the cape.

3.44 Concha de Gijon (43˚33'N., 5˚40'W.), a large bay, lies between Cabo de San Lorenzo and Cabo de Torres, 3.7 miles WNW. The SE part of this bay can easily be identified by Cerro de Santa Catalina, which fronts the city of Gijon, 2.1 miles WSW of Cabo de San Lorenzo. This promontory, 44m high, has a grass covered flat summit and is steep on its N and E sides.

Playa de San Lorenzo, a long sandy beach, extends E from the SE side of Cerro de Santa Catalina and borders the NE side of the city; however, it is not generally visible from the NW.

Cabo de Torres (43˚34'N., 5˚42'W.), 124m high, is steep and reddish with rugged pinnacles at its extremity. A main light is shown from a prominent tower with a dwelling, 12m high, standing on this cape. Several spherical gasholder tanks stand 0.5 mile SSW of the light and are also prominent from seaward.

Caution.—Banco Las Amosucas, a rocky bank, lies about 1.6 miles ENE of Cabo de Torres and is marked by lighted buoys. It has a least depth of 14.2m and breaks in heavy weather. During NW gales, the sea close SE of this bank may also break; vessels are advised to keep to the N and W at such times.

Islote Orrio de Torres, an islet 20m high, lies close off the N extremity of the cape.

Restinga de Riastaches, a rock ledge, extends up to about 0.5 mile NNE of Cabo de Torres and has depths of 10 to 20m. A rock, with a depth of 9.2m, lies near the N edge of this ledge. Piedra de la Concha, with a least depth of 15.8m, lies about 0.7 mile ENE of Cabo de Torres. All of these dangers break in bad weather.

Roca Martin, with a least depth of 14.8m, and Roca Punta de Amandi, with a least depth of 13m, lie about 1 mile NNE and 0.9 mile NNW, respectively, of Cerro de Santa Catalina. Roca

La Moral, with a least depth of 13.3m, lies 0.4 mile E of Roca Punta de Amandi and Piedra del Rio, with a least depth of 17.3m, lies 0.7 mile ESE of Roca Martin. All of these dangers generally break in heavy weather.

Puerto de Gijon (43˚34'N., 5˚42'W.)

World Port Index No. 37560

3.45 The port of Gijon occupies the whole of Concha de Gijon between Cabo de Torres and Cerro de Santa Catalina. It has a large commercial harbor situated at the W side, and extensive shipyards situated at the S side.

Winds—Weather.—Generally, the winds blow from the SW and W in winter and NE in summer. During the month of March, NW gales are fairly common but the Galerna is not as severe here as at Bilbao. Calms are fairly frequent throughout the year and average 15 per cent during most months.

The climate is temperate and the temperature rarely reaches freezing. The lowest temperatures occur in January when readings of 1˚ to 2˚C may be reached at night. The highest temperatures occur in July, August, and September when readings of 26˚ to 27˚C are common.

Fog is fairly frequent throughout the winter months, when it averages 5 days per month from October to January. The least fog occurs in April, but a moderate amount may be expected during the summer.

Strong winds from SW to NW can raise the water level by 0.5m. Strong winds from NE to SE can lower the water level by 0.5m.

Tides—Currents.—Tides rise about 4.6m at springs and 3m at neaps.

The tidal currents in the entrance to the harbor are very weak and variable.

Depths—Limitations.—The approaches to the port are generally deep, with depths of 21 to 25m W and SE of Banco Las Amosucas. The entrance to the commercial harbor has a depth of 18.5m.

Generally, the following limitations apply to vessels berthing in the harbor:

1. Vessels of 215 to 250m in length are limited to a draft of 13.7m and should have an underkeel clearance of 1.5m during entering.
2. Vessels of 250 to 260m in length are limited to a draft of 13.7m and should have an underkeel clearance of 1.8m during entering.
3. Vessels of 260 to 275m in length are limited to a draft of 13.7m and should have an underkeel clearance of 2.1m during entering.
4. Vessels of 275 to 290m in length are limited to a draft of 13.7m and should have an underkeel clearance of 2.4m during entering.
5. Vessels of 290 to 305m in length are limited to a draft of 12.5m and should have an underkeel clearance of 2.7m during entering.
6. Vessels over 305m in length intending to enter the harbor should contact the local authorities for information concerning additional limitations.
7. Vessels with a maximum length of 275m and a maximum draft of 14m discharging at Muelle Moliner may proceed directly to the berth.
8. Vessels with a maximum draft of 16.5m discharging at Muelle de Minerales may proceed directly to the berth.

The harbor can accommodate general cargo, bulk, container, ro-ro, tanker, and LPG vessels. In addition, there are facilities for fishing vessels and supply vessels associated with offshore oil installations.

Vessels up to 231,000 dwt, with a maximum length of 333m and a maximum draft of 20.5m, have been accommodated.

Gijon Berth Information

Name	Length	Depth
Muelle de Minerales	652m	19.0-21.0m
Muelle Los Porticos	700m	14.0m
Muelle de Ribera	495m	7.0-8.0m
Espigon I	580m	8.0-11.5m
Espigon II	750m	7.0-12.0m
Alineacion 4 and 5	257m	6.0-7.0m
Muelle Norte	415m	8.5-11.0m
Espigon de Liquidos	360m	8.5m
Muelle de la Osa	1,071m	8.0-12.0m
Muelle Rendiello	789m	5.0-7.0m
Muelle Ingeniero Moliner	313m	14.0m

Aspect.—The port consists of three different sections. El Musel, a large commercial harbor, is situated in the W part of the bay. Puerto Local, the old harbor, is situated in the SE part of the bay and used as a marina. The section situated in the SW part of the bay between the other two is occupied by several repair and shipbuilding yards.

The commercial harbor is protected by two main breakwaters. Dique Principe de Asturias, the main N breakwater, extends just over 1 mile E from the E side of Cabo de Torres. Dique de al Osa, the main S breakwater, extends 0.8 mile NE from the SE corner of the bay. Inner breakwaters divide the harbor into tidal basins and form an entrance 600m wide.

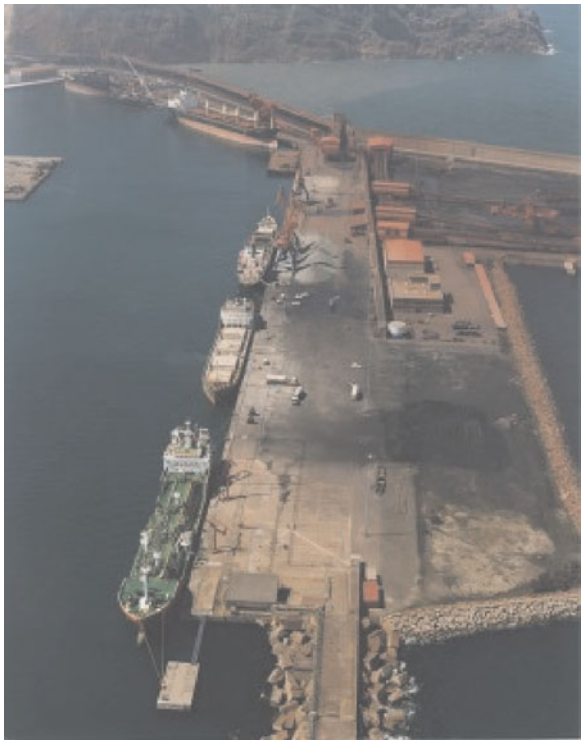
In addition to the landmarks previously described in paragraph 3.44 with Concha de Gijon, the high buildings in the city can be seen from a considerable distance to seaward.

Pilotage.—Pilotage is compulsory for vessels over 150 grt. Vessels should send an ETA at least 24 hours in advance. Pilots can be contacted on VHF channel 14 and board about 1 mile outside of Dique Principe de Asturias, the outer breakwater. During bad weather, pilots may board in the lee of the breakwater.

Vessels intending to anchor outside the port should first contact the pilot station on VHF channel 14 or 16 when within 3 miles of the Dique Principe de Asturias.

Anchorage.—In good weather, large vessels can anchor, in depths of 21 to 24m, sand, within the roadstead ENE of the outer breakwater head. Small vessels with local knowledge can anchor closer in, but caution is necessary to avoid the areas

Puerto de Gijon



Gijon—Dique Norte and NE side of Darsena del Musel

Gijon—Liquid Bulk Terminal

Gijon—Muelle de la Osa

with rocky bottom. Pilotage is compulsory for vessels anchoring within the port limits, SE or S of the outer break-water head.

In heavy weather, anchorage within the roadstead is unsafe and large vessels are advised to remain at sea until conditions moderate.

Puerto de Gijon to Cabo Penas

3.46 The **Rio Abono** (43˚34'N., 5˚34'W.) flows into the sea 0.7 mile SW of Cabo de Torres and, in good weather, is accessible to boats and barges. A prominent bridge crosses the river near its entrance. Above the mouth, the sides of the river have been filled in and only a narrow canal remains. Extensive storage buildings and railway facilities are situated in this vicinity and may be seen from seaward.

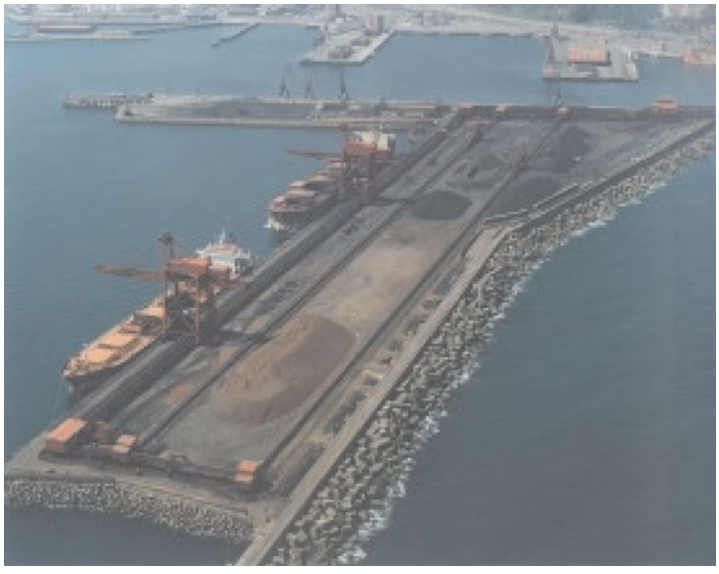
Ensenada de Candas (43˚35'N., 5˚46'W.) is located 3 miles WNW of Cabo de Torres and affords shelter to small vessels with local knowledge. This bay lies between Punta Socampo and Punta del Cuerno, 0.8 mile NW; its entrance is encumbered with several shoals which break in strong winds. Winds from the NW raise a heavy sea outside of this bay, and those from the NE may cause considerable turbulence within it.

Punta del Cuerno is high, steep, and bordered by shoal water. A main light is shown from a tower, with a dwelling, 12m high, standing on a terrace situated on the slope of the point.

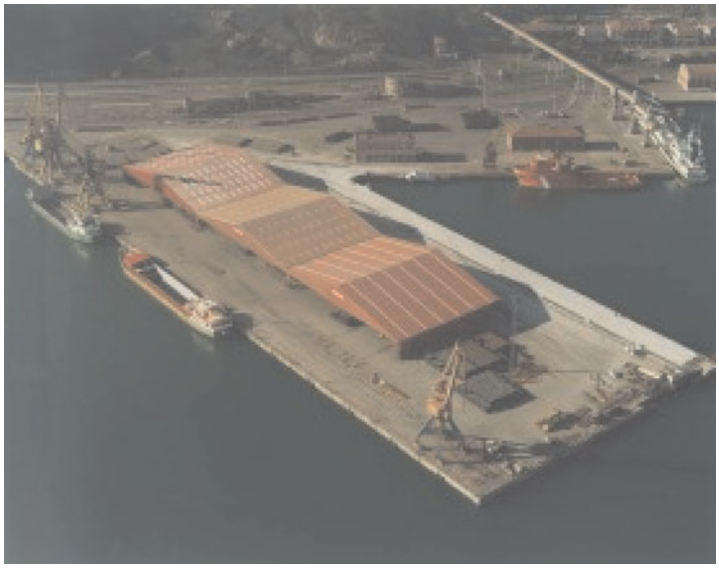
A small drying harbor protected by a breakwater fronts the town of Candas in the W part of the bay and is mostly used by fishing boats. An entrance channel which leads through the shoals is indicated by a lighted range. Small vessels can anchor, in depths of 5 to 8m, sand, E of the head of the breakwater, but local knowledge is recommended.

Punta del Cabrito (43˚36'N., 5˚46'W.), low and fringed by rocks, lies 0.3 mile NNW of Punta Sombrado. The coast between is fronted by numerous drying reefs.

Ensenada de Luanco (43˚37'N., 5˚47'W.) is entered between Punta del Carmen, located 0.5 mile WNW of Punta del Cabrito, and Punta del Gallo, 0.7 mile NNW. It is formed by



Gijon—EBHI Terminal (S side of Dique Principe de Asturias)



Gijon—Espigon I (N pier in Darsena del Musel)

low reef-fringed shores and protected from NW winds by Sierra de Perono, a hill, standing 0.5 mile N of the entrance. An islet surmounted by a prominent chapel fronts Punta del Carmen. A breakwater extends E from Punta del Gallo; a small drying harbor used by fishing boats lies on its S side. The entrance to the bay is encumbered by numerous reefs and shoals. A channel, indicated by a lighted range, leads through these dangers and has a depth of 4.5m.

The entrance is dangerous in heavy seas; during bad weather, all the outer dangers break. Local knowledge is required.

Punta de la Vaca (43˚38'N., 5˚47'W.), 44m high, is located 0.5 mile N of the NW entrance point of Ensenada de Luanco. It is the cliffy and flat termination of a bold promontory. Bajo El Xato, a pinnacle drying rock, lies close NNE of this point.

Cabo Penas (43˚39'N., 5˚51'W.) is located 3 miles NW of Punta de la Vaca. The coast between consists of several craggy points and small bays which are fronted by numerous reefs, rocks, and shoals. It should not be approached without local knowledge. Cabo Penas is fully described in paragraph 4.2.